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VIEW OF THE DISEASES

MOST PREVALENT

IN THE UNITED STATES OF AMERICA,

AT DIFFERENT SEASONS OF THE YEAR.

WITH AN ACCOUNT OF THE MOST IMPROVED METHOD
OF TREATING THEM.

BEING AN ABSTRACT, NOT ONLY OF THE EDITOR'S OWN EXPERIENCE,
BUT OF THE EXPERIENCE OF SEVERAL PHYSICIANS OF
DISTINGUISHED ABILITIES RESIDING IN THE
DIFFERENT STATES;

INCLUDING THE SUBSTANCE OF ALL THE LATEST AND MOST
IMPORTANT IMPROVEMENTS THAT HAVE BEEN MADE IN THE
TREATMENT OF SIMILAR DISEASES IN OTHER
COUNTRIES.

COLLECTED AND ARRANGED BY

WILLIAM CURRIE,

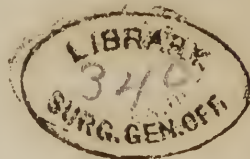
Fellow of the College of Physicians of Philadelphia, Member of the American Philosophical Society, Physician to the Magdalen Asylum, &c.

"The office of teacher, whether assumed or conferred, can never
compensate for the living lessons of experience".....BEDDOES.

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of Second and Walnut Streets.*

.....
1811.



DISTRICT OF PENNSYLVANIA, TO WIT.

BE IT remembered, that on the thirty-first day of January, in the thirty-fifth year of the independence of the United States of America,
* * * * *
* L. S. A. D. 1811, William Currie, of the said district, hath deposited
* * * * *
in this office the title of a book, the right whereof he claims as author and proprietor, in the words following, to wit :

A View of the Diseases most Prevalent in the United States of America at different Seasons of the Year, with an Account of the most improved Method of Treating them. Being an Abstract, not only of the Editors' own Experience, but of the Experience of several Physicians of distinguished Abilities residing in the different States. Including the Substance of all the latest and most important Improvements that have been made in the Treatment of similar Diseases in other Countries. Collected and arranged by William Currie, Fellow of the College of Physicians of Philadelphia, Member of the American Philosophical Society, Physician to the Magdalen Asylum, &c.

"The Office of teacher whether assumed or conferred, can never compensate for the living lessons of experience." BEDDOES.

In conformity to the act of the congress of the United States, intituled, "An act for the encouragement of learning, by securing the copies of maps, charts, and books to the authors and proprietors of such copies, during the times therein mentioned ;" and also to the act intituled "An act supplementary to an act, intituled, 'An act for the encouragement of learning, by securing the copies of maps, charts, and books to the authors and proprietors of such copies, during the time therein mentioned,' and extending the benefits thereof to the arts of designing, engraving, and etching historical and other prints."

D. CALDWELL,

Clerk of the District of Pennsylvania.

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TO THE

REVD. DR. NICHOLAS COLLIN,

SIR,

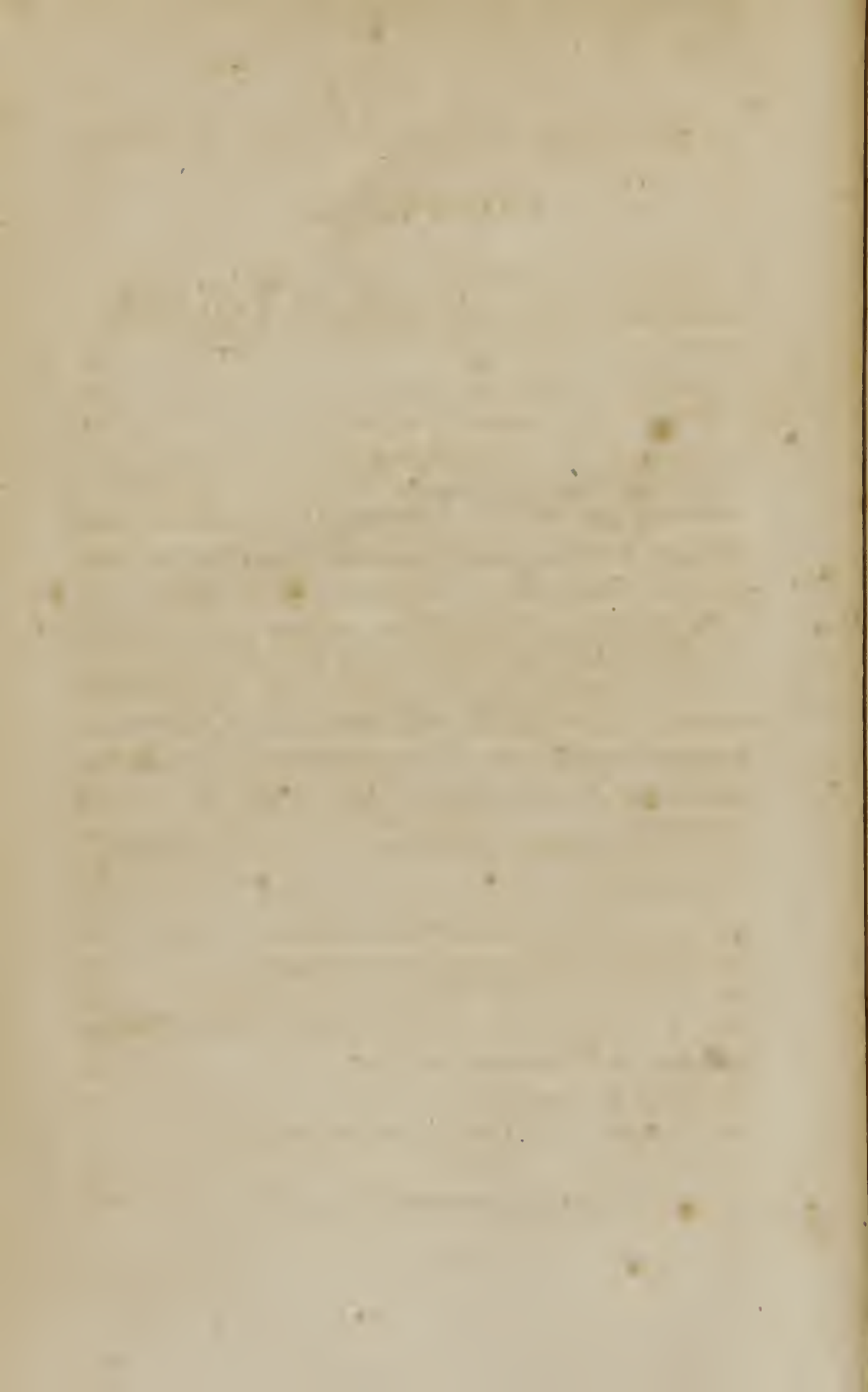
Presuming on your friendship and complaisance, I have taken the liberty of dedicating the following View of Diseases, &c. to you, as a tribute of respect to which you are justly entitled on account of your literary and scientific acquirements, and particularly for your philanthropic inquiries into the most probable means of diminishing physical and moral evil, and improving the condition of the human race; and for inculcating the rational and philosophical doctrine, that "he best answers the end of his creation, who contributes most to the welfare of the community."

I am, with assurances of much respect and esteem,

Your faithful and obedient serv't.

WM. CURRIE.

Philadelphia, Feb. 1, 1811.



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ERRATA.

- Page 43, *for eger read æger.*
 for sequiter read sequatur.
44, *for egrotus read ægrotus.*
101, *for borax read boracis.*
121, *for balsa read barley.*
122, *for empiema read empyema.*
152, *for hemoptysis read hæmoptysis; and in other place*
 where it is printed with an e instead of æ.
165, *for parenchimatous read parenchymatous.*
184, *for cochliaria magna read cochliæ magnæ.*
187, *for alba read albi.*
218, *for aquilla read aquila.*
221, *for gallæ read gallar.*
234, *for par read pur.*
235, *for magnesia read magnesîæ.*

The reader is requested to correct any other errors that may occur.

PREFACE.

HAVING had frequent opportunities, in the course of more than thirty years practice, among different descriptions of people, of observing the relative success of different remedies and methods of treating the diseases most prevalent in Philadelphia and the adjacent country, at different seasons of the year ; and having had favourable opportunities, from frequent consultations, with some of the most experienced and best informed Physicians of Philadelphia, and from many years correspondence with Physicians of distinguished abilities and established character, residing in other States, of acquainting myself with the result of their experience and observations, and of comparing them, as well as the result of my own practical observations, with the practice and opinions of the most approved medical writers of Europe, (whose publications I have had constant opportunities of consulting at the very excellent Library of the Pennsylvania Hospital) ; and presuming, that the publication of the result of information derived from such sources, would be acceptable to Physicians in general, and to the junior and less experienced members of the profession in particular, and especially to those who are precluded by situation, from ready access to public libraries, I have been induced by these considerations, to publish the following abstract of the information which I have acquired relative to the history and treatment of the diseases

that are most prevalent in this country at different seasons of the year, together with the substance of all the latest and most important improvements that have been made in the treatment of similar diseases in other countries. And as I can with truth assure the reader, that I have neither proposed nor directed any remedy or method of treatment that has not been repeatedly confirmed by my own experience, or by the experience of those "who make truth their aim, the public good their end," I can recommend the adoption of a similar method of treatment to others, from a conviction that they will find it, as I have done, more efficacious than any other method that has hitherto been made public.

As among the numerous difficulties which attend the practice of Physic, a very considerable one frequently arises from the resemblance of the symptoms of several diseases, which differ essentially in their nature from one another, whereby the most cautious and experienced are sometimes deceived, I have endeavoured to the best of my abilities, to give a faithful transcript of the diagnostic, or distinguishing symptoms of the diseases, that I have exhibited a view of in the following pages, without troubling the reader with a prolix and tedious detail of such symptoms as are common to other diseases: I have also endeavoured to point out the effects of remedies and the circumstances in which they operate with most certainty, from facts which have been confirmed by my own practical observations, or the practical observations of those on whose judgment and fidelity I can safely rely, without having recourse to abstract reasoning to account for the manner of their operation, as I am convinced that for want of strict attention to this circumstance many Physicians of the greatest ingenuity have proved the most unsuccessful interpreters of the language of nature.

But though I consider experimental inquiries as the only direct road to certainty, I by no means consider theory as a useless auxiliary.—For without reasoning from effects to causes, and exercising the judgment, in the arrangement of facts, and the application of principles deduced from facts, to particular cases, the Physician would have, like the Lawyer, to depend upon the strength and vigour of his memory for precedents to regulate and guide his practice, otherwise he would be under the necessity of trusting to conjecture, and of prescribing at random.

The Empiric from ignorance of the nature of different diseases, prescribes only to the leading symptoms, without reference to the proximate cause, or that particular condition of the whole, or part of the system, on which the existence of the symptoms depend, or are continued.—The confusion, uncertainty and danger of such practice is too obvious to require particularising.—But theory to be of use, must be derived from induction, or conclusions drawn from authentic and established facts. In this way, it becomes not only a useful, but an indispensable auxiliary to experience, and therefore should never be divorced from it.

A constant and diligent attendance on the sick, may instruct us in the external aspect of diseases, and enable us with some degree of certainty to prognosticate their issue; but without the exercise of the understanding in reflecting on their causes and nature, it will never furnish us with any other than the mere fortuitous means of relieving them, as is finely exemplified by Dr. Herdman in his account of illiterate nurses, who persist in managing infants agreeably to long established custom however improper and irrational, because they have been long in the habit of managing them in that particular way, and therefore dignify it with the imposing title of *experience*; whereas it is only habit founded in caprice and continued through ignorance and prejudice. Experience properly so

termed, does not consist in habit or a mere routine of the same practice—it consists in retaining, changing, or varying our practice, according as repeated trials, and impartial observations of the comparative effects of those trials point out that which ought to be preferred. The effects of thunder and lightning were long observed before Dr. Franklin's time; but till he investigated and discovered their nature and cause, no one ever thought of the means by which they might be disarmed of their destructive power.

Having in compiling the following abstract, endeavoured to the best of my judgment, to separate facts from conjectures, and truth from the infinitude of error, with which it is blended in most of the systems of physic that I am acquainted with, I shall make no apology for laying it before the public, as I presume the importance of the facts which it contains, and the utility of the design, will more than compensate for the defects of the execution, in the estimation of those who prefer *truth* however plain and unadorned, to *fiction*, though decorated with all the flowers of rhetoric or all the embellishments of art.

As errors and imperfections, however, will doubtless be found in a work which has for its subject an Art that is daily receiving additional improvements, and which embraces such a variety of objects, (though I have taken all the care in my power to guard against their admission,) I request every reader that is a competent judge of medical subjects, who discovers any error or mistake that has a tendency to injure or mislead, as he values the welfare of his fellow creatures, to communicate it, without delay or reserve, that it may be corrected in a future edition.

INTRODUCTION.

THE diseases, most prevalent in the range of country included within the limits of the United States, from November to July are, catarrh or inflammation of the mucous membrane of the bronchiæ;* pleurisy and peripneumony, or inflammation of the pleura and lungs; hepatitis or inflammation of the liver; cynanche tonsillaris or inflammation of the tonsils uvula and fauces; cynanche trachealis, or inflammation of the trachea, commonly called the croup or hives; gastritis and enteritis, or inflammation of the stomach and intestines; hepatitis or inflammation of the liver; rheumatism or inflammation of the muscles of the limbs and other external parts of the body; arthritis, gout, or inflammation of the ligaments, more especially of the small joints; erysipelas or inflammation of the skin; epistaxis or hæmorrhage from the nose; hæmoptysis or hæmorrhage from the lungs; and the phthisis pulmonalis or consumption of the lungs; the cholera

* This disease however is most prevalent in the months of November and December, when the weather is most variable. The same remark applies to the croup.

and diarrhœa from the middle of July to the middle of September, particularly among infants and young children; the dysentery from the beginning of August to the middle of September, particularly when long protracted heat and drought are succeeded by cold and wet weather of several days continuance; the intermittent, remittent or bilious fever, from the middle of August to the end of October; the malignant yellow or pestilential fever, which has occasioned such deplorable mortality of late years has been confined almost exclusively to the seaport towns and cities, and has prevailed only in the summer and two first of the autumnal months; the typhus or continued fever, with nervous putrid or malignant symptoms, only occurs in confined situations crowded with people, where ventilation is in a great measure excluded, and cleanliness neglected; the cynanche scarlatina or scarlet fever, with ulcerated sore throat being a contagious disease does not occur every year, but when it does occur, it becomes most prevalent in spring and autumn, and in the latter season it is sometimes accompanied with putrid or malignant symptoms. This disease being accurately described by several European writers, is omitted here.

Having enumerated the diseases that are most prevalent in this country at the different seasons of the year, I shall now proceed to give a concise description of their usual symptoms, and an account of the method of treatment which has been found most uniformly successful by physicians of the most distinguished abilities and extensive experience in this country, as well as by myself; I shall not however treat of them, according to the preceding enumeration, but (for the sake of those who study the healing art systematically), according to the arrangement of the late illustrious Dr. Cullen; all of which, excepting the cholera and diarrhœa, are included

in the first class of his nosology and the five following orders, viz.

1st, **Febris**, or fever without local affection, of which there are several genera and species, originating from different causes.

2d, **Phlegmasia**, or local pain and inflammation, constantly accompanied with fever.

3d, **Exanthemata**, or an eruption of the skin more or less extensive, accompanied with or preceded by fever.

4th, **Hæmorrhagiæ**, or discharges of blood accompanied with or preceded by fever.

5th, **Profluvia** or preternatural secretions of mucus accompanied with fever, of which the catarrh and dysentery are genera.

The cholera and diarrhœa belong to the class neuroses or second class in **Dr. Cullen's** nosology and order spasmi.

The cholic and tetanus, &c. are also genera of the same class and order.

CLASS I.

PYREXIA.

ORDER I.—*FEBRIS*.

The diseases of this class are divided into several orders, genera and species ; of which fever is placed in the first order, and generally begins with a distressing sense of cold, which very frequently proceeds to a rigor or shivering accompanied with a small low frequent pulse, shrinking of the features and a livid colour of the skin, which, after a certain period, shorter or longer, in different persons, are succeeded by an increase of heat and thirst, greater fulness of pulse and enlargement of the features.*

GENUS I.

OF INTERMITTENT FEVER.

A fever of an intermitting or remitting type or form is an endemic of America, and is more or less epidemic every year during the autumnal season in all low and moist situations in

* According to Dr. Wilson pyrexia should be divided into two classes, viz. febris idiopathica and febris symptomatica, of which last the phlegmasiæ, hæmorrhagiæ and profluviiæ are genera.

every part of the Continent ; it is also observed in almost all the seaport towns during the same season, more particularly in those where putrifiable materials are permitted to accumulate.

This disease in the form of a quotidian is frequently observed also in the vernal season, but at this season it is very rare for any to be affected with it, excepting those who had been affected with it the preceding autumn. The most usual intervals between the fits of a pure and regular intermittent are twenty-four or forty-eight hours, the latter of which is called the tertian period and is the most frequent ; the former is called the quotidian. The paroxysms or fits of regular intermittents are always finished in less than twenty-four hours. But when the hot or sweating stages of the paroxysm do not entirely cease before twenty-four hours from the beginning have terminated, they almost invariably suffer before that time a considerable abatement or remission of their violence ; and at the return of the quotidian period the patient for some time is affected with a greater sense of debility and oppression and is more restless and uneasy : soon after which the febrile symptoms all increase in force with a diminution of the debility and oppression about the præcordia, and of the sickness and propensity to vomit which usually occurs in the cold or forming stage of the fever. This form of fever is properly denominated remittent. The type of this kind of fever is generally changed in its course in the following manner ; the tertian is changed into a quotidian, the quotidian into a remittent, and the remittent into a more continued form. In all these cases the fever has its paroxysms continued longer than usual before it changes into a type of more frequent repetition.

The tertian while it has a longer interval has a longer and more violent cold stage than the *quotidian* ; and when a quar-

tan occurs which has an interval of seventy-two hours between each paroxysm, it has a much longer and more violent cold stage and a shorter paroxysm than either. From accurate attention therefore to the circumstances of the cold stage of fevers a physician may generally foretel the nature and type of the fever which will follow, provided there be no local affection present.

The paroxysm of the tertian when regular, generally occurs about noon. That of the quotidian and the remittent from six to eleven in the morning. The tertian however frequently differs in the time of the return of its paroxysms, in some cases returning every third day with unequal paroxysms alternately similar to one another; sometimes with two paroxysms every sixth day and one every third day. The two forms of intermittent fever are also frequently united, acting as if they originated from different causes having a mild paroxysm one day and a more violent one the next in the early part of the afternoon. The intermittent also frequently becomes connected with phlogistic affections in the early part of the winter in the southern states, and is then a complicated disease, dangerous and difficult to cure.

It is also varied greatly in its symptoms by the circumstances of constitution; in persons of an inflammatory diathesis and plethoric habit, the symptoms resembling during the exacerbation, those of the order of phlegmasiæ, or the violence of those fevers which depend on the inflammation of some sensible organ.

This is particularly the case with persons soon after removal from high and dry, to low marshy situations.

In persons of different constitutions the symptoms during the paroxysm are seldom high, nor the intermission complete the first time of receiving the disease, but if they recover and take it again, the intermissions are generally complete, and of the tertian type, especially if they have been long accustomed to reside in marshy situations. It appears from the most accurate observations that the longer the paroxysms are protracted the sooner they are repeated; from this circumstance it appears extremely probable that the cause of this difference of repetition with respect to time depends upon the cause of the protraction of the paroxysms; and the protraction of the paroxysms most undoubtedly depends on the existence of opposite conditions of the human body, viz. on a phlogistic diathesis, or strong tendency to inflammation; or on a diminution, defect or depression of the vital power.

It is now universally agreed that fevers of the intermittent kind originate from a vegeto-animal source, or from the exhalations from the dead parts of either vegetable or animal substances in a putrefying state, usually called marsh miasmata.

OF THE PROXIMATE CAUSE OF FEVER.

The fundamental operations of life consist in the alternate motion and rest of the organic fibre. Causes which disturb and interrupt this necessary process occasion disease and finally death. The first perceivable cause of fever is a disturbance of the alternate and regular tenor of the action and rest of the irritable or moving parts of the body. There are teachers who pretend that the causes of fever is a directly stimulating power: others and the more numerous class contend that it is directly sedative. If the cause were stimulating, as it must be supposed to be of the nature of other stimulating powers, the effects would necessarily begin to appear on the application of the cause and would cease upon the removal of that cause; but this is not the case, for persons are exposed to the cause of intermitting and nervous as well as to the cause of eruptive fevers without being sensible of any effects for several days. A period always intervenes, different on different occasions, but always of sufficient length to prove that a febrile action is not the effect of an immediate impression, nor when this new or altered action does take place is it uniformly increased; on the contrary, it is often diminished in energy and force at its commencement; recovering its natural or even an increased degree of energy in the course of the paroxysms. On the other hand if the cause of fever was a power directly sedative, the operations of life must be supposed to become languid in a uniform tenor, to stagnate, and finally to cease. In fact, notwithstanding the researches of physicians and philosophers of every age, the proximate cause of fever still remains in much obscurity.

Hence I am of opinion that those who seriously endeavour to improve the practical part of the profession should abandon such disquisitions to the professors of medical schools, and content themselves with plain reasoning from manifest phænomena and careful inductions from the effects most uniformly observed to follow the remedies employed under different circumstances. The intermittent fever differs from all other fevers in its tendency to recur without the application of its specific cause as well as in the circumstance of intermissions. Thus, in particular seasons and on changes of weather, particularly when the wind is easterly and the air damp and cold, those who have lately recovered from it, frequently experience a renewed attack. Every paroxysm is divided into three distinct stages denoted by **Coldness**, **Heat** and **Sweating**.

In the cold stage the patient is affected with a remarkable rigour or shivering and distressing sense of cold with pain of the head, back, loins and limbs, quick respiration and a quick small pulse, generally attended with vomiting or efforts to vomit, the patient frequently throwing up the contents of the stomach, mixed with bile, after which the coldness abates or ceases and the second stage begins with a sense of heat from the back, and fulness and irregularity of the pulse, the pain and the features which were shrunk and pale during the cold stage becoming fuller and redder with a whiteness of the tongue and an increase of thirst, &c. A profuse sweat at length generally flows from every pore, which continuing for three or four hours finishes the paroxysm and then leaves the patient perfectly free from all morbid symptoms for a certain period, excepting a defect of strength and a diminution of his usual appetite. After the sweat has conti-

nued to flow freely for some time, the urine which was red in the second stage deposits a brown coloured sediment. For a more ample and perfect description of the symptoms and the order in which they succeed each other, the reader is referred to Dr. Cullen's first lines of the practice of physic and to Fordyce's accurate description in his second dissertation on fever.

TREATMENT.

The cure of intermittents consists :—

1st, In shortening the paroxysm and rendering the intermission perfect ; and,

2dly, In preventing the recurrence of the paroxysm.

The first of these intentions may be effected in cases of too high action, by blood-letting, cathartics, antimonials, and the antiphlogistic regimen, particularly when during the hot stage the pulse is strong and full, and the pain of the head and back great. These are particularly requisite if during the intermission the patient complains of pain in his head or back, with strong full pulse, and the subsequent intermission is imperfect.

But when inflammatory symptoms are not so manifest or urgent, antimonials, or ipecacuanha, administered in such quantity and manner as to produce nausea or inclination to vomit, but not actual vomiting, will generally suffice for this

purpose as they generally bring on appearances similar to those which occur at the crisis of fevers.

In order to produce these effects the medicine should be given in as large a dose as the stomach will bear without producing vomiting; that is one-third or one-fourth of a grain of tartarised antimony, or a grain and a half or two grains of pulvis ipecacuanhæ or some other such remedy in the same proportion should be exhibited at the beginning of the hot stage and repeated every two or three hours afterwards till the fever intermits.

If profuse sweating should be the consequence he should remain in bed until the fever goes entirely off.

When a perfect crisis or intermission is not produced, continuing these medicines during the remission produces beneficial effects by taking off what remains of the paroxysm and by diminishing the force of the next paroxysm; they also tend to lessen the power of habit in producing subsequent paroxysms. In these circumstances they may be repeated every four, five or six hours, till more perfect intermissions are obtained. When however the paroxysm is protracted, not from an inflammatory diathesis, but from depression of strength or constitutional weakness, which is indicated by a weak, small and quick pulse, great languor or faintness, oppression, restlessness and frequent sighing;—evacuants, sedatives, and other debilitating remedies are improper, instead of which warm pediluvia, blisters, vinous drinks, and small doses of volatile alkali, camphor or ether, &c. should be substituted.

When the intermissions are complete, the cure is generally rendered more certain and expeditious by the exhibition of an emetic and a mercurial cathartic.

℞. Tart. Emet. gr. vi.

Aq. communis ℥iij.

Capiat cochlearia duo statim et cochleare unum omni quartâ partē horæ donec. operaverit, tunc potatur aq. tepid. vel thea chamomel, frequenter.

The best time to exhibit the emetic is generally at the end of the sweating stage, though some prefer giving it two or three hours before the cold fit is expected, and I have frequently known it suspend the fit where exhibited at that period, when thirty or forty drops of tinct. opium have been taken immediately after its operation, the patient at the same time lying in bed warmly covered, and drinking warm palatable drinks, moderately stimulating, at short intervals, such as snake-root tea, wine whey, or weak negus, &c.

A purge should always be given when necessary, soon after the termination of the paroxysm, unless the febrile symptoms are very violent, and indicate an inflammatory diathesis, which, when the disease occurs in the spring season is generally the case, when bleeding should be premised, and will be most effectual during the hot stage.*

From thirty to forty grains of rhubarb, and from two to five grains of calomel made into pills by rubbing them toge-

* Dr. Parkinson in his Medical Admonitions mentions an instance of a person dying convulsed in consequence of being bled during the cold stage of an intermittent.

ther in a mortar, with a little water, will be generally as suitable as any other, adjusting the quantity to age, strength and constitution of the patient. -

If a milder purge is required numerous formulæ may be found in the London or Edinburgh Dispensatories, and in the works of most practical writers.

Among the remedies for preventing a recurrence of paroxysms, the Cinchona or Peruvian bark has for a long time borne the preeminence. When the bark is employed, a drachm of it reduced into very fine powder should be exhibited immediately after the cessation of the paroxysm, (unless in cases where its continuance evidently depends upon phlogistic diathesis), and it should be repeated during the intermission every two hours at least; the stomachs of most persons will bear this dose if mixed with sweetened water, snake-root tea, strong coffee or simple cinnamon water. If it will bear a larger dose two drachms at the end of every three or four hours would be preferable.

The exhibition of the bark at short intervals should not be omitted during the intermissions; therefore if the patient falls asleep he should be awakened at the proper time for taking it.

The bark should be continued till within an hour of the time that the commencement of the paroxysm is expected, when it should be omitted, and from fifteen to thirty drops of laudanum in the generality of cases should be given in cinnamon or mint water and sinapisms applied to the wrists and ancles. If no appearance of the disease occurs at the usual

period, it should still be continued during the time that the next paroxysm should have occurred. For if the remedy has had sufficient efficacy during the time of one intermission to prevent the return of the next paroxysm, it will certainly during the term of the following intermission have power to prevent the subsequent paroxysm.

In a regular tertian this is always the case, and very frequently in a quotidian. By these means the stomach has time to clear itself of the former doses before fresh ones are taken, and the sense of weight and uneasiness arising from large and frequent doses has time to go off.

If no traces of the paroxysm have appeared the stomach is left capable of digesting food taken during the interval, or if the patient's sleep is very much disturbed time is given for repose.

When a paroxysm of an intermittent has been prevented by the bark, it frequently happens that if it be discontinued abruptly some slight appearances of a paroxysm will occur about the usual time of its occurrence, when it is not interrupted.

When slight symptoms of the return of the disease occur, such as languor, dull pain in the fore part of the head and small of the back, with a disinclination to exertion, they are generally succeeded in a few days by a complete paroxysm, and the disease proceeds as if it had never been suspended. Several means have been employed to prevent this reproduction of the disease, such as from twenty to forty drops of the tinct. opii an hour before the usual time of its recurrence,

immersing the feet and hands at the same time in the hot bath, the application of sinapisms or other rubefacients to the wrists and ancles, the pressure of a tourniquet upon the arms and legs, &c. &c.

Adopting the practice of Dr. Trotter in such cases, I have given thirty drops of the tinct. opii to my patients the moment they felt the first approach of the cold fit.

If the first dose does not bring on some warmth in the space of ten or fifteen minutes, ten drops were directed to be taken in the same manner every quarter of an hour till they produced the desired effect. There will seldom be occasion to exceed sixty drops in the space of an hour, as the medicine seldom fails to give relief in that time. In a few minutes from the exhibition of the tincture an exhilaration of spirits is generally perceived, which is quickly followed by a relaxation of the surface, the countenance appears cheerful and a flush spreads over the cheeks. The pulse from being weak, quick and sometimes irregular, becomes more slow, full and equal, an agreeable warmth is diffused over the whole frame, and every unpleasant feeling vanishes, sometimes in half an hour. As soon as any symptoms indicate the approach of another paroxysm, if the intermission has been perfect or nearly so, the tinct. opii should be repeated in the same manner and will generally be attended with equal success, so that the patient seldom experiences much tremor or shakings.

The bark should also be continued in the same doses as at first at the time that would have been the intermission after the paroxysm that was prevented by it, employing it as fre-

quently as during the time of the first intermission, observing to discontinue it during the time that the subsequent paroxysm should have existed; and observing the same process during the next intermission; that is if the paroxysm of a tertian had commenced at twelve o'clock at noon on Sunday, and had completed its stages by midnight, a drachm of the bark should be exhibited at one o'clock on Monday morning and continued every two hours till eleven on Tuesday morning; it is then to be discontinued till one o'clock on Wednesday morning, when it is to be given in the same manner till eleven on Thursday morning; it is then to be discontinued again till one on Friday morning, and then to be exhibited till eleven on Saturday, and afterwards discontinued altogether for six days. An ounce of bark should then be exhibited in the course of the day for two days, and to prevent a relapse again in the same manner after an interval of six days more.

If the bark should affect the intestines as a purgative, it is a common and proper practice to give opium to prevent this effect; as the opium should be employed so as to act on the intestines constantly and with efficacy, a third part of a grain of opium, fifteen of confectio opiata or ten drops of tinct. opii should be given and repeated at the end of every fourth or sixth hour, and may be combined with the dose of bark which falls in at that period.

When on the other hand the patient is costive during the use of the bark, twenty-five or thirty grains of rhubarb made into pills with Castile soap may be given at bed time with any thing agreeable, or five grains of aloes and one of calomel made into a pill with a little water. When these are not

thought advisable any other mild laxative may be substituted.

If the stomach will not bear a sufficient quantity or frequent repetition of the bark in substance, it may be given in decoction or infusion, either alone or combined with quassia root, columbo or gentian and orange peel; and in cases where the vital power is manifestly deficient, snake root should be joined with the other ingredients, and a table spoonful or two of Madeira, Port or Sherry wine should be given with or immediately after each dose. The manner of making the decoction or infusion may be seen in the latest London Dispensatory. It is however certain from the observations of Dr. G. Fordyce of St. George's Hospital, that the powder is much more powerful in preventing the return of the paroxysms of an intermittent than any other preparation of it.

If the stomach will not retain it in any of these forms, or the patient has taken an insuperable disgust to it, it may be employed by clysters with nearly equal efficacy.

For this purpose half an ounce of bark in very fine powder, mixed with half a pint of sago, panada, gruel or barley water, with or without spices, according to circumstances, may be administered every four hours during the intermission of a tertian, and every three hours during the intermission of a quotidian, observing the same future periods in administering them as directed when the bark is taken into the stomach. If the clysters should not remain with the patient, twenty drops of laudanum should be added to every one, or ten drops may be given by the mouth,

in cinnamon or peppermint water, an hour before receiving each clyster.

When the disease appears to be rapidly verging to the remittent type from manifest defect of vital power, the most effectual remedy for arresting its progress that I have ever seen employed was a combination of calomel and opium in the proportion of one grain of the former to one fourth of a grain of the latter, and exhibited in this quantity every fourth or sixth hour, day and night, and rubbing from a scruple to a drachm of strong mercurial ointment upon the side over the liver twice a day till the effects of the mercury become visible in the gums; the bark in decoction with the addition of wine proportioned to the strength and existing sensibility being continued at the same time. When the feverish symptoms have been accompanied with strong pulse and burning dry skin, the application of linen compresses wet with vinegar and cold water to the forehead and wrists have generally moderated these symptoms. Where, on the other hand, the pulse during the hot stage is small and weak, and the heat of the extremities moderate, in addition to the employment of the decoction of bark, wine and blisters, a gallon or two of cold water should be thrown over the naked body of the patient at that period of the hot stage when the pain of the head, strength of the pulse and heat of the skin are greatest, after which he should be wiped dry and put to bed, and some agreeable warm stimulating infusion, such as sage tea with the addition of lemon juice and white sugar, or weak wine whey given frequently to promote perspiration.

The ascites which frequently succeeds this fever is generally attended with anasarcaous swellings and a paucity

and thickness of urine; sometimes the intermittent goes off when the swelling begins, at other times it continues, and comes and goes in an irregular manner. These dropsies are not to be cured by purging alone, nor by *mercurials*, but chiefly by the lixivial salts.

About forty grains of the salt of wormwood or salt of tartar may be dissolved in about ten ounces of an infusion of absynthium vulgare, to which may be added two ounces of Holland gin. This mixture is to be taken at three draughts and repeated daily. The patient will seldom have occasion for any other medicine except once in four or five days half a drachm of pilulæ ex colocynthyde cum aloe for a purge, and in the decline of the disease some common chalybeate. Sometimes the diuresis is promoted by swallowing garlic or mustard seed; or an infusion of rad raphan rustican in cider.

When the ascites is accompanied with a hard swelling of the liver or spleen, the application of mercurial ointment over those viscera twice a day, or small doses of calomel or the blue pill once in twelve or twenty-four hours will be requisite.

Sometimes irregular agues with obstructed viscera, as well as dropsies, are removed by the following composition continued a considerable time.

℞. Flor. chamæmeli ℥ss.

Aq. bullient. ℥viij.

Macera per dimidium horæ et colaturæ adde.

Spir. vin. gallic, vel juniperi ℥ij.

Sal. absinth ʒi.

M. dentur quater quotidie, cochlearia, quatuor.

If these remedies do not reduce the dropsical swelling, or at least diminish it considerably in the course of five or six days, the tincture of digitalis and alterative doses of calomel should be substituted and given in small and repeated doses for several days, or till its effects upon the stomach or nervous system make it advisable to discontinue it.

To prevent the purgative effects of calomel it may be combined with a small quantity of opium, and given at bed time; and the tincture of digitalis may be given in any pleasant draught or drink an hour before every meal, beginning with ten drops and increasing the quantity at the end of every third or fourth day till it removes the disorder, or until it occasions unpleasant symptoms.

A COLLECTION OF FACTS
 RELATIVE
 TO THE EFFECTS OF CERTAIN PREPARATIONS OF ARSENIC
 IN INTERMITTING FEVERS,
 WITH OCCASIONAL REMARKS.

THOUGH arsenic when taken to a certain extent has always been ranked among the most dangerous poisons, particular preparations of it have been employed by empirics for more than a century in the cure of agues or intermitting fevers ; but it appears from an article published in the third volume of the *British critic*, that it was first introduced into regular practice in the year 1774 by a *Mr. Mowbray*, a surgeon at *Biggleswade*, who for a small sum purchased from the widow of a German empiric a recipe for the preparation of a remedy which he had employed as a specific in the cure of agues, the principal ingredient of which was arsenic.

This recipe *Mr. Mowbray*, with becoming liberality, communicated to several of his medical friends, and employed it himself with great success. At that time *Mr. Mowbray* had a shopman whose name was *Edwards*, who

usually prepared this medicine. Edwards afterwards settled at Newmarket and vended this medicine under the name of *Ague Tincture*. This remedy was occasionally adopted in the hospital practice at Stafford in the year 1781-2 and 3.

In the beginning of 1780, Mr. Hughes to whom Dr. Fowler pays a high compliment for industry, attention and abilities in his profession, informed him that he had tried to imitate these ague drops, and that from a number of experiments he was convinced they were a preparation of arsenic.

This information directed the attention of Dr. Fowler to the use of arsenic in intermittents; and taking advantage of a hint given by Dr. Lewis in his dispensatory, he thought of preparing a watery solution of it by means of the fixed vegetable alkali; and after many trials of such a solution of different degrees of strength, he adopted the following formula.

R. *Arsenici albi in pulverem subtilissimum triti.*

Salis alkalini fixi vegetabilis purificati singulorum grana sexaginta quatuor.

Aquæ fontanæ distillatæ libram dimidiam.

Immitantur in ampullam florentinam qua in balneo arenæ posita, aqua lente ebulliat donec arsenicum perfecte solutum fuerit, deinde solutioni frigidæ adde.

Spiritus lavendulæ compositi unciam dimidiam. Aquæ fontanæ distillatæ libram dimidiam, plus vel minus, adeo ut solutionis mensura libra una accurata sit, vel potius pondere unciz quindecim cum dimidia.

This formula, Dr. Fowler employed in a very great variety of cases, and in the generality of them with the most flattering success. In some of the cases, however, when from inadvertency or other circumstances it was administered in over doses it operated as a violent emetic, attended with griping and purging. In seven cases of periodical head ach in which he employed it, six of these were radically cured by taking from twelve to twenty drops of it twice or thrice a day. He frequently used it from ten drops twice a day to twenty drops three times a day, and has cured agues by both extremes as well as by intermediate doses. The latter however he found to be far more efficacious than the former; but this superior success was counterbalanced by their operative effects being sometimes troublesome and distressing; hence he gives the preference to the intermediate doses which will at the same time in general be found to be sufficiently successful. He recommends the following doses of the preceding formula as the most advantageous and safe, viz.*

To patients from two to four years of age from two to four drops; to patients from five to seven years of age from five to seven drops; to those from eight to twelve years, from seven to ten drops; to patients from thirteen to eigh-

* According to Dr. Hill's observations in the 5th vol. Edinburgh Med. and Surg. Journal, a single drop or two at most of the arsenical solution from a half ounce vial is a sufficient dose for a child three years old, repeated twice every twelve hours; for older subjects the dose may range from two to five or six drops in the same period, and to adults, whatever type the fever may assume, from six to twelve drops, from an ounce vial, combined with an equal quantity of tinct. lav. comp. tinct. aromat. &c. at the choice of the prescriber.

tēen, from ten to twelve drops ; and to patients from eighteen and upwards, twelve drops for a dose. These doses he directs to be given to adults in a tea cup full of water, and to children in a less quantity of the same at stated hours, whether they coincide with the paroxysm or not, three times a day for five days.

At the end of that time the fits being suspended, he advises the use of the medicine to be omitted for two or three days, and then to be resumed to prevent a relapse. When the sensible effects of the medicine were troublesome, he either omitted the medicine till those effects ceased, or added a sufficient quantity of laudanum to the solution to relieve them.

When a nausea of half an hours duration, a stool extraordinary a day, or slight griping pains in the bowels follow the exhibition of this medicine ; according to Dr. Fowler they scarcely require notice : but when either the vomiting or purging becomes distressing or troublesome, discontinuing the solution and giving opiates in small doses repeated as the symptoms may require, generally affords effectual relief.

The œdematous swelling of the face and eye-lids, which sometimes occurs a few days after commencing the use of the medicine generally subsides on discontinuing it ; when it does not, its removal may be accelerated by emetics and cathartics.*

* This swelling appears to be owing to the extraordinary effect of this remedy upon the exhaling vessels, in consequence of which more fluid

The efficacy as well as safety of arsenic in intermitting fevers, prepared according to the above prescription, is not only supported by the testimony of Dr. Fowler and Arnold, but by Drs. Withering, Willan and Hamilton, and by many other physicians of distinguished abilities in Europe.

It has also succeeded in the hands of several of the members of the profession in Philadelphia, and particularly with Drs. Wistar and Griffiths, as well as with the editor, especially where infants or young children have been the subjects of the disease.

Dr. Hamilton has frequently employed a solution of arsenic in water without the addition of the alkaline salt, and is of opinion that it is equally safe as well as efficacious, provided the solution be carefully filtered through paper to prevent any undissolved particles of arsenic from escaping.

In no case that he employed this preparation did he observe that it produced any permanent ill effect or any temporary inconvenience except nausea or griping and tenesmus. These by care in the exhibition of the medicine, particularly with the first doses, which were always small, were prevented from becoming troublesome or in the smallest degree alarming.

is exhaled than the lymphatics can readily take up. A lower degree of the action of this remedy on the exhaling or extreme vessels perhaps cures the disease by giving tone and excitement, and thereby removing the spasm, or stricture, by which the febrile symptoms are supposed by the ingenious Cullen to be supported.

It is probable, however, that the preparation employed by Dr. Hamilton, from not being united with the alkali, is less steady in its effects, as it is less readily diffusible in a farther quantity of menstruum than when in a saline state.

It is a common practice in the state of Delaware to give powdered arsenic combined with opium in the form of a pill or bolus in doses, to an adult, of one-sixth of a grain of the former, and one-fourth of a grain of the latter, repeated two or three times a day; and in the second volume of the Asiatic Researches pills composed of arsenic and black pepper made according to the following formula, are directed.*

But from the distressing and even dangerous effects which have been observed by different physicians to have followed the too frequent or incautious exhibition of a weak filtered solution of this highly active substance, and from its well known corrosive effects when applied to the surface of the stomach in an undiluted state, I cannot think it warrantable to exhibit it in that form. We have the testimony of Sir George Baker, published in the third volume of the Transactions of the London College of Physicians, that though a medicine composed of arsenic and

* "Take of white arsenic one hundred and five grains, black pepper six hundred and thirty grains, beat well in an iron mortar, for four days at intervals; when reduced to an impalpable powder, remove it to a stone mortar, add water by degrees, so as to form a mass of pilular consistence; make pills of the size of tares or small pulse (about eight hundred); keep them in a dry shady place; give one, night and morning with a little cold water; gentle cathartics precede their use with considerable effect."

opium, the dose of which was a very few drops in water, was taken by some people, and sometimes successfully, in the cure of intermittents; violent vomitings and dysentery were now and then the effects of it, and in one case it was followed by a palsy of the lower limbs.

Dr. Clark in his observations on diseases of long voyages, says, the use of arsenic in fevers sometimes occasions swelling of the face and other distressing symptoms.

Dr. Girdlestone in a communication published in the fifteenth volume of the *London Medical and Physical Journal*, says, he has had several opportunities of observing sickness, pains of the abdomen, nasal hæmorrhage, cough, icteric symptoms, and dropsy, induced by the incautious or too large doses of Fowler's solution of arsenic.

One child lost its nails, hair, and part of its skin, from this solution, which a lady had given to it in improper doses. It occasioned a very great weakness in the bowels of a gentleman who took twenty drops of it three times a day for more than three months for a leprous affection, without curing the disorder as soon as may be generally done with much smaller doses.

In my own practice I have seldom employed any of the preparations of arsenic when the patient could be prevailed upon to take the Peruvian bark in sufficient quantity, and it could be retained on the stomach; and when I have employed it I have never ventured to prescribe more than six, eight or ten drops of Fowler's solution three times a day to an adult, without regard to the exacerbations of the fever, and from one to four drops to an infant or young child.

As a vehicle to administer it in, Dr. Girdlestone gives the preference to an agreeable spicy decoction or infusion. But I have found children take it more readily in a small draught of sweetened water, and when it has disagreed with the stomach or bowels, which is the only inconvenience I have ever seen produced by it, I have directed it to be given in a draught of cinnamon or peppermint julep, with the addition of from one to five or six drops of laudanum to each dose, according to the age of the patient and severity of the symptoms.

Though it is often very difficult to determine the credit that is due to a remedy in a disease which frequently ceases without the use of any remedy, or after the exhibition of such medicines as cannot possibly have any share in the cure, its cessation being apparently occasioned in some instances by a change in the temperature of the atmosphere, a removal of the remote cause, or a suspension of the proximate cause in consequence of some sudden emotion of the mind, I have frequently seen the disease in patients residing in the marshy tract of ground below the city, in seasons when the disease has been remarkably prevalent, leave the patient so much sooner after the regular use of this remedy for five or six days, than, from the regularity of the recurrence of the paroxysms and the increasing debility of the patients, I have any reason to suppose would have been the case if left to take its own course, or if treated by any of the remedies in common use except the Peruvian bark, that I have not the most distant doubt of the cure being produced by the operation of the arsenic. And notwithstanding the idea of danger, which is generally associated with the name of arsenic, I am perfectly satisfied that with proper caution and due attention to its sensible

effects, it may be administered with equal safety as many other medicines in common use, such as corrosive sublimate, sulphate of copper, tartarized antimony and opium, all of which in certain doses are destructive to life. And I am convinced from my own experience, as well as from the testimony of several eminent, impartial and disinterested physicians, that it is a very efficacious remedy in the generality of the cases of regular intermittents, and in those periodical head aches which occur in the season when intermittents are most prevalent.

Dr. Fowler is of opinion that arsenic is also a good remedy in cases of the common autumnal remittents: but as I have never tried it in this form or type of fever, I cannot pretend to say whether his opinion is correct or not; but admitting it to be so, I should not think myself justifiable in prescribing it in any case where the debility and other symptoms indicated great danger, lest from its tendency to occasion sickness, griping and tenesmus, it should increase the debility, and consequently danger, especially as my experience teaches me that under such circumstances the fatal progress of the disease may be generally arrested by injections of bark, the liberal use of wine, and the application and frequent repetition of blisters and sinapisms.

Certain preparations of mercury are frequently employed by physicians in cases of intermitting fever, and in protracted cases frequently with benefit; but in recent ones I have rarely observed this remedy to cure the disease when employed in the most judicious manner, or even to suspend the return of the paroxysms. Dr. Granger has left testimony of his having observed the same circumstance, in the campaign in Flanders in the year 1748, and we are in-

formed by Vanswieten in his Commentary on the seven hundred and fifty-seventh Aphorism of Boerhaave, that the paroxysm of a quartan has continued to return regularly during a course of salivation, and that he has known a tertian arise in the midst of a salivation.

When obstructed viscera or dropsy is connected with an intermittent, small and repeated doses of calomel, or the blue mercurial pill, afford more frequent relief than any other remedy.

When young children are the subjects of this disease, Dr. Martin, an eminent physician in Easton on the eastern shore of Maryland, assures the editor that he has found a dose of calomel if given in the forming stage, very frequently prevent it from proceeding any further; his usual dose for a child two years of age is four grains. He also adds in a letter dated Decr. 21, 1810, that he has "found the mineral solution of arsenic very useful in the regular tertian, and as much entitled to infallibility as any other medicine in stopping the ague and fever of this type only, but the patient is very liable to relapses, and never has the same healthy-looking countenance as is apparent in one who is in the habit of taking bark."

OF THE
AUTUMNAL REMITTENT FEVER,
USUALLY CALLED
THE BILIOUS FEVER.

THIS fever, like the intermittent fever, of which it is only a variety or the same in kind, but differing in degree, consists of repeated paroxysms, without any entire or perfect intermission between them; but although the hot and sweating stages of the paroxysm do not entirely cease before the end of twenty-four hours from the commencement of each paroxysm, the symptoms of the hot stage remit or considerably diminish in violence within that period, and at the return of the quotidian period, or somewhat earlier in the morning, the paroxysm is in some degree daily renewed, and runs the same course as before.

When in this fever the remission of the symptoms is considerable, and the return of a fresh paroxysm is distinctly marked by the symptoms of a cold stage at the beginning of it, the fever generally changes in the course of a few days under proper management to a perfect intermittent. But where (as frequently happens in constitutions previously debilitated by fatigue, abstemious living, &c.) the remissions are very imperfect and without any

moisture on the skin, and the returning paroxysm is only distinguished by greater languor or debility, sickness at stomach, oppression about the region of the heart, and paleness of countenance, the disease unless prevented by art generally degenerates into a continued type, and when it terminates favourably is many days before it comes to a crisis or solution.

The more this disease assumes the appearance of the typhus or continued fever, conjoined with symptoms of general debility, and the shorter the remissions and the greater the debility the greater is the danger.

When the disease terminates fatally it is generally towards the usual time that the paroxysm terminates, or during the cold or forming stage. The brain becomes affected—the senses fail—the patient becomes speechless—his breathing becomes quick and laborious—he can no longer swallow any thing—a diarrhœa mostly attends—his pulse ceases at the wrists—cold sweats break out—phlegm rattles in his throat—his eyes grow dim and become fixed—the motion of the heart ceases, and he becomes a lifeless corpse.

The causes of the remittent fever are the same with those which give origin to intermittents, but acting here in a more powerful manner either on constitutions previously debilitated or on those with an inflammatory diathesis at the time of the application of the cause. In many cases of those of the first description the accession of every paroxysm is accompanied with vomiting of bilious matter, from which circumstance this form of fever has very generally obtained the appellation of *the bilious fever*.

That the remittent fever is only a variety of the intermittent, and only differs from it in degree, is rendered evident—1st, From the leading symptoms in both being the same; 2d, From their changing occasionally into each other; 3d, From their arising in the same situations, and at the same seasons of the year; and 4th, From their yielding to the same treatment.

The longer and more distinct the remissions, the greater is the prospect of a favourable event.

TREATMENT.

When the paroxysms are manifestly prolonged by an inflammatory diathesis, the signs of which have been already mentioned, bleeding, purging, and the frequent exhibition of antimonials in nauseating doses, in conjunction with cooling drinks, and a very spare and cooling diet, will be the most suitable remedies. The bleeding should be repeated at short intervals, that is every six or eight hours, and especially during the exacerbation of the paroxysm, till the fulness and strength of the pulse is sufficiently reduced. After which an emetic composed of ten or twelve grains ipecacuanhæ, and from one to two of tartarized antimony should be exhibited, for one dose, soon after the appearance of a remission, and after the emetic has done operating twenty-five or thirty drops of tinct. opii, or from one to two grains of opium in substance, with twice as much camphor, should be given; blisters should also be applied to the wrists at the same time.

In many cases where the pulse became tense and hard during the exacerbation, I have found the following remedies

in conjunction with repeated bleeding, particularly serviceable in rendering the remissions more perfect.

℞. Calomel. ℥i.

Pulv. jalap. ℥ij.

Antimon. tartar. grs. ii. ad. grs. iv.—m. f. ch. no. vi.

Una hora quaque vel secunda sumenda.

When these occasion distressing sickness at the stomach or puking, the quantity of the emetic tartar is to be diminished, or they are to be given at longer intervals.

This prescription, however, can seldom be persisted in more than three days successively without endangering salivation, as I have frequently had occasion to observe, and when it has had that effect, instead of rendering the remissions more perfect, it has induced an inflammatory diathesis and rendered the remissions more obscure, and the exacerbations more violent. Whenever inflammatory symptoms are evident therefore, I have been induced from long experience to give the preference to the purging neutral salts, or to the following composition.

℞. Fol. sennæ. tamarind. āā ℥ij.

Antimon. tartariz. grs. ij.

Aq. calid. ℔ i.

After these have been boiled in a covered vessel for ten or twelve minutes, the water is to be strained off, sweetened with sugar, and the patient is to take two ounces, or a wine glass full, every hour, till his bowels are freely moved; diminishing the quantity or lengthening the intervals, if it should occasion vomiting.

In this manner it may be repeated during the exacerbation of every paroxysm.

But when the disease commences in a debilitated or infirm constitution, bleeding is an improper remedy, and ought not to be employed unless the existence of some local inflammatory affection should be joined with the fever.

But purging has generally been found beneficial at the beginning of the disease, in cases where the state of the pulse and heat of the skin have shewn great depression of strength.

In this stage of the disease from two to four grains of calomel made into pills, with from fifteen to twenty-five or thirty of rhubarb, may be given at one dose with perfect safety; though the same medicine at a later period, when symptoms of debility have become more evident, might be attended with some hazard.

In cases where bilious evacuations occur daily, the following purgative may be employed with more safety and equal efficacy.

℞ Fol. sennæ. ℥ss.

Tamarind. ℥i.

Vel. cristall. tartar. ℥ij.

Aquæ. com. ℥viij.

Coque; cola et solve in liquore manna vel sach. rub. ℥i.

Capiat eger hujus decoctionis ℥ij.

Hora quaque donec dejectio alvi sequitur.

After this preparatory process, if no inflammatory symptoms exist, the bark should be exhibited every hour during the period of every remission, in as large doses as the stomach will bear; and when it cannot be taken that way it should be exhibited in clyster, twice at least, before the next accession of

the paroxysm.* If the stomach is disordered and the pulse weak, the patient may be purged safely by an infusion of rhubarb and ginger, in boiling water.

Wine given with the bark during the remission, has also beneficial effects, if caution be observed not to exceed due bounds. One table spoonfull under such circumstances, giving greater excitement to the debilitated and irritable system than a wine glass full in a state of health.

I have frequently employed the bark during the exacerbation of the paroxysms, but I am inclined to believe seldom to advantage. It is therefore my opinion, that its use should generally be restricted to the period of remission, whether these are manifest or not.* Even during the remission I have generally found the bark detrimental so long as the phlogistic diathesis (denoted by hard or tense and frequent pulse) existed.

When the patient cannot take the bark either in substance or decoction, and cannot retain clysters long enough to be effectual even when combined with opiates, the solution of arsenic may be substituted with propriety, only observing to restrict it also to the periods of the remission. In some cases calomel in small and repeated doses, guarded from affecting the bowels by combining each dose with the fourth or sixth of a grain

* In cases of diminished arterial strength and disordered stomach which indicates an excess of bilious excretion, the following purge is equal to any other.

R. Fol. sennæ. oz. ss.

Rad rhæi. contusat. drs. ij.

Sem. cardamom. vel. cort. siccat. aurantior. drs. ss. m.

Coque in aq. com. lb. ss. ad. oz. vj.

Cola & capiat. egrotus. oz. ij.

Or half the quantity every two hours, till it operates.

of opium, and continued till its effects were visible in the mouth, has appeared to contribute essentially to the cure.

In the more advanced stages of the disease, particularly in the Southern States and in low unventilated situations, the mouth, teeth, and inside of the lips, become covered with a brown crust, and the tongue becomes so dry and stiff, that the patient can only make known his wants in whispers, or by signs.

Under these circumstances, wine of the best quality, given with a liberal hand is the principal resource, aided by the application of blisters to the back and wrists, and mustard poultices to the feet or ancles. Volatile alkali and camphor are also generally employed in such a state of debility; but wine when it can be had of a good quality, is much more to be depended on. It has been many years the practice in the West India Islands, to employ cold water in the cure of the remittent fever accompanied with bilious evacuations, both internally and externally; when therefore, the disease resists the usual remedies, this remedy may be substituted; in the employment of which the following rules should be carefully observed. *Cold water* may be drank throughout the hot stage of the paroxysm not only with safety, but with evident benefit, and the more freely in proportion as the heat is farther advanced above the usual healthy standard.

But it is a hazardous remedy after the sweat has flowed for some time, as well as in the cold or forming stage of intermittent and remittent fevers, however urgent the thirst.

Taken at such times as appear from several judiciously conducted experiments, it increases the chilliness and torpor of the surface and extremities, and produces a sense of coldness in the stomach, augments the oppression at the præcordia, and renders the pulse more feeble. The thirst therefore, in the

cold or forming stage of the paroxysm should be gratified with warm liquids.

When the hot stage is completely formed, large draughts of cold liquids are highly grateful ; they generally diminish the heat of the surface several degrees, and they lower the frequency of the pulse. When they are attended with these salutary effects, sensible perspiration and sleep commonly follow.

It may therefore be used with safety, and generally with advantage at any time, when there is no sense of chilliness or symptoms of an approaching cold stage present, when the heat of the surface is steadily above what is usual in health, and when there is no general or profuse perspiration.

In all cases where the pulse is strong, and the heat considerably above the healthy standard as measured by a suitable thermometer, placed under the axilla or within the patient's mouth, (the lips being shut to prevent the entrance of the external air) wiping the whole surface of the body with a linen napkin wrung out of cold water, or vinegar and water, has a powerful effect in moderating those symptoms and shortening the paroxysm, but in all cases wherein the symptoms of the disease resemble those of the typhus, or what in popular language is called the nervous putrid, or spotted fever, (the typhus mitior and gravior of the schools), sprinkling, or even dashing cold water over the naked body of the patient, has been found more efficacious in bringing on a safe and speedy crisis or solution of the paroxysm, than any other mode of treatment.*

* "Napkins wrung out of cold water, should always be kept applied to the head when it is hot, and the vascular action strong. This by reducing the heat-producing process, abates all the symptoms of the disease."

Beddoes' Researches, Anatomical and Practical, concerning Fever, p. 217—1807.

To render this application more certain as well as perfectly safe, the following rules are recommended by the late ingenious **Dr. James Currie**, of **Liverpool**.

1st. Under these circumstances, the temperature of the water should not be more than fifteen or twenty degrees lower than that of the human body.

2nd. The patient being taken out of bed and laid naked upon a mattress, or upon a sacking bottom, the water is to be sprinkled suddenly over his whole body, or if his strength is not too much exhausted, three or four gallons should be thrown suddenly over him: he is then to be wiped dry with a heated napkin, put to bed between blankets, and to take a table spoonfull of wine frequently, mixed with a draught of warm barley water, or thin panado, to encourage the flow of sensible perspiration.

3d. This remedy should be applied at the time that the exacerbation of the hot stage of the paroxysm is on the increase, or has come to its height, or immediately after it has begun to abate. This remedy appears to be improved by saturating the water with common salt.

The affusion of cold water, does not however, procure the same advantages when employed in the more advanced periods of this fever, as in the earlier stages, (when it is not connected with local affection or phlogistic diathesis), when the strength is less impaired and the morbid actions less firmly established. It is however, evidently advantageous in any stage with the exceptions already noted, while the heat of the patient raises the thermometer higher than the healthy standard, though it requires more caution in the advanced period of the disease, and in such cases the temperature of the water ought never to

be more than fifteen or twenty degrees below the heat of the blood.

In recommending the affusion of cold water therefore, as a remedy in fever, an express exception is made against its use both during the cold stage, or during the continuance of the chill, and after the perspiration has began to flow freely, and more especially, after it has continued to flow copiously for some time. An exception is also made against its being employed in the latter end of fever when the strength is much exhausted, and the heat is sometimes as low or lower than the usual temperature of health.

While however, the heat rises one or two degrees above the healthy standard, this remedy may be used in any stage of fever. But as it is scarcely to be expected, that at an advanced period of the disease, the progress of the fever can be stopped, or its duration much shortened, it may answer the same purpose, only in a degree somewhat less, in such cases, to employ the tepid affusion.

The term tepid, is applied to water when heated to that degree which is warm, but not hot to the sensation, and which in the way of affusion, is from 87° to 90° of the scale of Fahrenheit.

By the sudden affusion of tepid water, the heat of the living body is in many cases lowered as speedily as by the affusion of water that is cold. It very generally produces a considerable diminution of heat, a diminished frequency of the pulse and respiration, and a tendency to repose and sleep. It may therefore be substituted with propriety by those who dread the shock given by the sudden application of the cold affusion, and especially by those whose debility might render

the application of the latter hazardous.—When situation or other circumstances, render the dashing of tepid water upon the body very inconvenient, the febrile heat may be considerably reduced, and the frequency of the pulse diminished by moistening the palms of the hands and the soles of the feet with vinegar; for it appears to be from the sensation of heat in the extremities that the stimulus to the system is chiefly derived. This is uniformly a safe, as well as refreshing remedy.*

When none of the applications recommended are complied with, benefit may be afforded, though in an inferior degree, by spunging or wetting the body and limbs with cold or warm vinegar and water, especially when the symptoms indicate considerable vigour in the arterial system. This application like the others, should be regulated by the actual state of the patient's heat and sensations. But this mode of cooling the patient is not only less effectual, but in many cases less safe; for the system will often bear the sudden and general shock occasioned by the cold or warm affusion, when it sinks and fails from reacting under the more slow and successive appli-

* Mr. Theden, third Prussian surgeon-general, states, that in a malignant fever when the pulse was sinking and death so to speak, sat upon the tongue, he had applied compresses wetted with cold water upon the abdomen and scrotum, washed the breast, arms, feet and face with it, dried the parts and covered the patient with blankets, after which, warm liquids with a glass of wine, and a cordial draught with volatile alkali, were administered from time to time.—A full pulse succeeded, afterwards sweat, and the patient was recruited. In this way, he says he has saved numbers. Many who in such desperate circumstances employed all the means except the cold application died, whereas most of those recovered who used that also. Mr. Theden adds, that on applying the cold compress to the abdomen and scrotum, the patient shrinks, shudders, and becomes as it were reanimated. Now cordials have effect, and blisters, before inactive, draw."

Reddee's Researches—p. 219.

cation. It appears therefore, that the cold affusion is most effectual and best suited to the earlier stages of fever, uncombined with local affection or phlogistic diathesis; and warm affusion in the latter stages, and in cases of considerable debility.

The term cool, is applied to a temperature from 78 to 75°, when water of this temperature is employed the application should be sudden and momentary, by which a reaction of the arterial system is generally the consequence, and frequently a complete solution of the fever.

Throughout the whole of Dr. James Currie's reports, it is frequently urged and repeated, that "the solution of fever depends chiefly on the sudden, general, and powerful impression which is made on the sensations by the affusion; whereas, ablution only serves to alleviate symptoms, and to render the disease milder and the crisis favourable.

Dr. Jackson supposes the cold affusion excites new actions which supercede the former ones, and by that means cuts short the progress of the fever.

Opium has been employed of late years, by many physicians, in doses of one or two grains at a time, in the latter stages of the remittent fever, as well as in typhus, or continued fevers unconnected with inflammatory affections or preternatural arterial power, for the purpose of procuring sleep and inducing more perfect remissions; but recent experience proves that this method of administering opium, is by no means so efficacious as when it is given towards morning, or a short time after the exacerbation of the hot stage has begun to decline. When given during the increase of the exacerbation, it increases the heat and restlessness.

OF THE SYNOCHUS ICTERODES,

OR,

MALIGNANT YELLOW FEVER.

ALTHOUGH the malignant or pestilential fever, commonly called the yellow fever, like the small-pox and measles, is of foreign origin, and of a contagious nature; and has never been produced by any cause or combination of circumstances in this climate, as the facts which have been published by the college of physicians of Philadelphia, as well as my own observations, have fully satisfied me; yet as it has been my lot to witness the repeated occurrence of this formidable and frequently fatal disease of late years, it may not be improper in this place, for the satisfaction of those who have not had the same opportunities, to exhibit a concise view of its most usual symptoms, with an account of the method of treating it, which I have observed to be most successful in my own practice, as well as in the practice of others.

In this disease there is a very great diversity of symptoms, according to the particular constitutions of the patients, and other circumstances, similar to what occurs in the small pox, and other contagious diseases. In some the symptoms being mild and favourable; in others, the pulse strong and quick,

and the heat great and distressing ; while in others, it commences with great debility, oppression and restlessness.

In general it attacks suddenly, without any previous indisposition, with a chill, and pain in the head and limbs ; sometimes, but not always, with sickness at stomach, and an inclination to vomit—the eyes also appear inflamed and are painful—the pulse frequently becomes full and quick soon after the cessation of the chill, (which is generally of short duration) but without much apparent disorder in the respiration ; the skin soon becomes very hot and dry, and the face flushed, as well as the eyes red and watery ; great oppression and stricture about the præcordia, accompanied with extraordinary restlessness and frequent sighing.—The heat of the skin, and pain in the head and limbs, generally continue to increase during the first thirty-six hours, and then to decrease gradually for the same length of time ; so that at the end of seventy-two hours, all febrile heat and fulness of the pulse, together with the pain of the head and limbs, either leave the patient entirely and he speedily recovers, or they only remit partially, and are in a few hours succeeded by a different and more distressing train of symptoms ; and particularly by a painful burning sensation in the stomach, accompanied with almost constant sickness, and straining to vomit ; the contents thrown up at this period of the disease, are generally of the consistence of thin mucilage and of a cerulean or sea green colour—the pulse now becomes small, quick and irregular, the stomach painful upon pressure, and the costiveness of the bowels generally continues, but in some attended with tenesmus and griping.—These symptoms continue to increase in severity, if not soon relieved by art, and are in a short time succeeded by a sudden cessation of pain and heat, and a vomiting of a flaky, dark coloured mixture, resembling coffee grounds or the sediment of port wine, and in some cases,

looks like a mixture of soot and water.—This is usually thrown up at short intervals, mixed with a greater quantity of liquid than has been drank.

In this stage of the disease, during the intervals from vomiting, the patient feels so much ease that he imagines himself to be out of danger ; converses fluently, though somewhat incoherently, on various subjects.—Some under these circumstances, rise out of bed, walk about the chamber, but soon becoming faint and exhausted, lie down again. Convulsions or lethargy, generally follow these exertions, and death soon after closes the scene. Many however, instead of being affected with the black vomit, become comatose, and die without a struggle ; while others sink under the loss of blood from the nose and mouth, and sometimes from the eyes and ears, or from the bowels, as well as from the parts where blisters have been applied.

In most of the cases in Philadelphia, that have terminated mortally, the patients became as yellow as gold, before the vomiting of black matter made its appearance ; the whites of the eyes which at the beginning of the disease, were red and watery, became of a dull muddy yellow—the yellowness was first observable in the eyes, face, temples, and neck, and soon after over the whole body—In the first stage of the disease, the tongue was generally covered with a white fur ; its upper surface appearing as if it was covered with a piece of white muslin. After the third or fourth day, when the fever continued, it became brown and much drier ; but after the appearance of the black vomiting, it again became moist, and nearly as clean as in health.

The patient seldom vomited after the chill went off, during the first and second days of the disease, though he usually

complained of a load and an inclination to vomit—and he was either costive or affected with symptoms of dysentery, owing as appears from dissections; to an inflammation of the surface of the stomach and duodenum, and other portions of the intestines. Bile was rarely observed in the stools at an early period of the disease, unless when occasioned by means of purgatives; but when it did occur, it afforded a favourable prognostic. Black stools were common after the commencement of the black vomiting, and sometimes appeared of a dark colour after the exhibition of calomel, without being accompanied with black vomiting; but in those cases the evacuation was of a different consistence. When this disease, (which was generally more violent in its symptoms, more rapid in its progress, and more mortal in the event, than any other disease that has ever been observed in this country), was protracted more than a week; tremors of the hands sometimes occurred, but subsultus tendinum was scarcely observed in any case of this fever, though so common in the typhus, and in the last stage of bilious remittents.

When the disease ended favourably, the violence of the symptoms generally subsided on the third, fifth, or seventh day; and when it terminated fatally, the symptoms became more distressing and severe on the days last mentioned, and the patient died on the fourth, sixth, or eighth day from its commencement, most generally on the sixth or eighth, though a few have lingered to the eighteenth or twentieth, and some still longer, and died at last.

In persons of infirm constitutions or that lived abstemiously, symptoms of nervous affection were more prevalent than those of an inflammatory character.—In such persons the pulse was seldom strong or the heat very great, and the fever was longer before it came to a crisis. In persons whose

constitutions had been impaired by habitual intemperance, as well as in those who had been greatly debilitated by extraordinary exercise, or violent exertions, putrid and malignant symptoms appeared early in the disease, and in its latter stage, constant hæmorrhages from the nose, mouth and tongue.—Sexual hæmorrhages were also frequently profuse, and abortions common in pregnant women. In numerous cases, extravasated blood appeared under the cuticle, and large purple spots on different parts of the surface of the body; and in almost every case that terminated fatally, the skin became of a deep yellow, or orange colour, mixed with a livid or purple colour, and the gums became spongy and scorbutic. Persons with those symptoms seldom survived the sixth day, and some died as early as the fourth.

In the latter stage many were affected with coma and hæmorrhages, and great yellowness of the skin and eyes, and died without any symptoms of black vomiting.

In all the cases affected with the black vomit, the pulse became slower than in time of health—in many instances not beating more than forty or fifty times in a minute—and was generally accompanied with a bloated appearance of the face and a remarkable coldness of the face and limbs. Suppression of urine in the latter stages of the fever, frequently occurred, and like the black vomiting, almost invariably indicated a fatal event.*

* In these cases there appeared to be a total suspension of the office of the kidneys, for there was no urine found in the bladder, nor any inclination to evacuate it.

Whenever this symptom occurred and was not produced by the irritation or absorption of cantharides, it indicated speedy dissolution, especially when conjoined with singultus and the vomiting of a dark coloured mixture, resembling coffee grounds, or dark coloured mucous filaments, and especially when accompanied with a preternatural slowness of the pulse. When all these symptoms occur, they are very soon followed by coma and insensibility, or by convulsions, swooning, and death.

The symptoms which distinguish this fever from every other that has been observed in this country, are the suddenness of the attack, commencing in most cases, without any preceding lassitude or indisposition ; the redness of the eyes and flushing of the face ; and the long duration of the paroxysm before a remission takes place, being generally thirty-six hours before any considerable abatement is observable in the febrile symptoms ; whereas in the indigenous remittent or bilious fever, the violence of the paroxysm invariably remits within the first twenty-four hours ; and the paroxysm of the latter is renewed some hours after the first remission, which is seldom observed in the yellow fever ; but on the contrary, in almost every case where the fever has been violent, and the painful sensation of the stomach considerable, it is succeeded by a new train of symptoms, in a few hours after the remission of the fever ; particularly by frequent retchings, and vomiting of matter, which for a day or two, appears of the consistence of thin mucilage, and of a sea green or light olive colour, but afterwards becoming darker and mixed with flaky filaments, or membranous like fragments, at first resembling coffee grounds, and afterwards becoming darker and appearing like a mixture of soot and water, which is evacuated at short intervals, and in an extraordinary quantity. The yellow colour of the skin and eyes, is common to both the bilious and the yellow fever in persons of a plethoric habit, but is generally much deeper in the yellow fever.

The remarkable retrocession of the high and inflammatory symptoms which in the most dangerous cases of the yellow fever generally takes place about the third or fourth day, and leads the inexperienced observer and the deceived patient to conceive hopes of recovery, when there is no greater indication of his speedy dissolution, is a circumstance without a parallel in the history of fevers, and therefore in dangerous cases, may be considered a pathognomonic sign of this disease.

The other symptoms which more particularly distinguish this fever from every other that has ever come under my notice, except mortal cases of gastritis, are the blackness and flaky or curdly appearance of the matter thrown up by vomiting, and the preternatural slowness of the pulse which occurs after the vomiting of black matter has commenced.

The circumstance of its being communicated by contagion in confined situations, also distinguishes it from every form or variety of the bilious remittent of this climate; and for proofs that it is communicated from one to another, I refer to the publications of the college of physicians already mentioned.

Dr. Hume, commissioner of the sick and wounded of the British navy, in the West Indies, in the years 1741 and 1742, asserts, that in all the subjects that he had opened himself or seen opened by others, after having had black vomiting, the stomach was always found mortified, and less or more of such fluid as they had vomited was found in the cavity of it, and could easily be pressed from the vessels.—In two of his dissections, of persons who had died before the third day, he found the inner coat of the stomach highly inflamed, but no marks of gangrene.—In two others who died at a later period in the year 1735, at Barbadoes, who had had black vomiting, he found the villous coat mortified in several places—(pages 208 and 217, of his account of the yellow fever.)—That mortification of the internal membrane of the stomach always precedes or accompanies black vomiting, I am convinced from the numerous dissections which have been made by different practitioners since the publication of **Dr. Hume**.

“The liver which is naturally of a dark red colour, frequently appears on dissection, in the yellow fever to be pale and yellow.”

“Further down the intestines the black stuff was thicker and more viscid, almost resembling tar.—In those cases the villous coat was very easily separated by drawing the fingers over it.”—*Hume's account.*

In the year 1805, the last time of its appearance in Philadelphia, I was several times present at the examination of the stomachs of patients who died of the yellow fever at the City Hospital, but could discover no certain marks of gangrene in any of them, though the villous coat was generally abraded in different parts, and the excoriated parts appeared of a very dark colour—extravasations of blood were also common; and yet, the sudden cessation of pain in that organ succeeded by cadaverous coldness of the limbs and slowness of the pulse, afforded a strong presumption that the inflammation in that organ had ended in gangrene, or partial death of the villous membrane.

The black matter usually found in the stomachs of those who died after the fourth day had none of the characters of either blood or bile; for white paper immersed in it was neither stained red, purple, yellow or green, but appeared like it does when moistened with the fluid which issues from a gangrene; yet, from the extravasated blood, which always appeared on different parts of the internal surface of the stomachs of those who had had the black vomit, and the extensive and florid inflammation observable in the stomachs of some who died at an early period of the disease, and had not vomited any black matter, though the vomiting of every thing received into the stomach had been almost incessant, I am inclined to believe that the black coloured matter resembling coffee grounds, (and which is generally known to be the signal of a fatal termination), is chiefly composed of small portions of common mucus, coloured by the dissolved and black

blood which oozes into it from the dilated capillaries. It cannot be bile, changed in its colour, in consequence of a morbid state of the secretory vessels of the liver, because those vessels were seldom found diseased, and because the bile in the gall bladder, which was generally full, retained its natural yellow colour, or was changed to the colour and consistence of the syrup of rhubarb, or a mixture of gamboge and mu-dilage.

Nor is it probable, that the matter, which resembles coffee grounds, is bile, changed in its colour and consistence after its entrance into the stomach, because large quantities of such matter was found in the stomachs of several who had had little or no vomiting of any kind ; and without some vomiting, or at least some exertions to vomit, bile cannot gain admission into the stomach. Nor can the dark coloured flaky particles, which give the appearance of coffee grounds to the contents of the stomach, be the villous coat detached or abraded, because neither ulceration or gangrene were observable in the stomachs of some that had vomited black matter, and without ulceration or gangrene it cannot be abraded.

CONJECTURES

RELATIVE TO THE ORIGIN OF THE YELLOW MALIGNANT FEVER....WITH FACTS AND ARGUMENTS SUBVERSIVE OF THE OPINION OF THOSE WHO ASCRIBE IT TO DOMESTIC CAUSES.

FROM the frequent opportunities which I have had of seeing the rise and progress of this malignant disease in Philadelphia, and from the facts which I have received from Dr.

Hosack of New York, a professor and physician of the first eminence in his profession, as well as from several other physicians of established character in other cities and sea-port towns of these States, who have had similar opportunities, and who regard the cause of truth more than the convenience of those "who drive the car of trade." I am convinced that it is a contagious disease, and that every time it has appeared in this country, the contagion by which it is propagated has been imported from some of the West India Islands, in the persons of the sick, or in articles of clothing, or bedding, that have been used by the sick; but from what cause the contagion proceeds, or is originally produced, I do not pretend to know with absolute certainty; though, I am inclined to believe, from the facts which have been recorded by different authors, particularly by the Jesuit Pere Labat, Drs. Des Portes—Dalzille—the Revd. G. Hughes—Don Ulloa—Dr. Rouppe—Dr. Schotte, and more recently by Dr. Chisholm, that the contagion of this disease is only generated on board of foul and crowded transports, or ships of war, after long confinement in hot climates; and that it is produced by the joint operation of the exhalations from living human bodies in an impaired state of health; and the exhalations from the corrupted bilge water confined in the ship's hold and well, particularly during the rainy season, when from the necessity of keeping the hatches shut, fresh air is in a great measure excluded, cleanliness neglected, and the noxious exhalations permitted to accumulate.—The disease has never been known to make its first appearance on shore in tropical climates, owing, I presume, to the want of a concurrence of all the circumstances which sometimes occur on ship-board.

It is a fact generally admitted, that the effluvia from a number of human bodies in confined and unventilated situations, generally produce a disorder in the different functions

of the bodies of those exposed to such exhalations, for any length of time; and that in persons thus affected a specific noxious substance is secreted which is capable of propagating the disease from the sick to the sound; hence, a strong presumption arises that the contagious principle which gives origin to the yellow fever, is generated by a specific process of secretion in the human body, in consequence of the combined operation of the exhalations from the living human body, and of the gases, which proceed from the putrid vegetable and animal substances contained in bilge water.

The most satisfactory proofs that the malignant yellow fever is a distinct disease from the indigenous remittent, or bilious fever of the Southern States of America, as well as from the typhus gravior, were communicated to Dr. Hosack in the year 1805, by Dr. Joseph Bayley, one of the physicians on the Quarantine station, a copy of which was published soon after the last time that the disease appeared in Philadelphia and New York, which was in the year 1805, by the College of Physicians of Philadelphia, in a pamphlet, entitled "Additional Facts and Observations relative to the Nature and Origin of the Pestilential Fever."

The causes assigned for the origin and generation of the malignant fever commonly called the yellow fever, by those, who trust to theory, in preference to the testimony of their own senses, are, the noxious exhalations which proceed from the filth of cities, comprehending the common sewers and covered drains, gutters of the streets, docks, privies, neglected cellars, yards, burial grounds, and the impure water of the pump wells, &c.

But if it can be made appear that the pestilential fever, usually called the yellow fever, occurred with all its compli-

cated horrors in some of the commercial cities or sea-port towns of this country at an early period after their first settlement, when none, or but few of the causes existed to which the origin of the disease has been imputed by the advocates of its domestic origin; and, if it can also be shewn that this pestilential disease did not make its appearance for many years previously to the year 1793, in any of those commercial cities or seaport towns, though the enumerated causes existed in much greater abundance during that period than they did at an earlier period, or than they have existed since the year 1793; we are most egregiously deceived if it may not be fairly and satisfactorily concluded, that it does not originate from those sources.

In tracing the malignant yellow fever to its earliest occurrence in this country, we find from the *Journal of Thomas Story, Esq. Recorder of the city of Philadelphia*, vol. 1st, that a very mortal fever prevailed in Philadelphia, in the autumnal months of 1699, which carried off six or eight persons daily, and some days ten or twelve. *Mr. John Gough* in his account of this fever, in his *History of the Friends*, vol. 3d, p. 516, says, that the fever which occurred in Philadelphia in the year 1699, was the same as that which has since been called the yellow fever, and had been prevalent for some time before in several of the *West-India* islands. This fact is also confirmed by a letter written by *Isaac Norris, Esq.* who resided in Philadelphia during its prevalence, who also relates that it was very mortal in *Charleston* at the same time. It also appears from an extract from *Hewatt's History of South Carolina*, communicated by *Dr. Tucker Harris*, that a great number of the inhabitants of *Charleston* were destroyed by it in 1699, that they suffered very much from a hurricane the same year, and that the greatest part of the town was laid in ashes by fire.

There are no records of the occurrence of this disease in New York, in the year 1699; but the late Dr. John Bard mentions in a letter, a copy of which was published in Carey's Museum for the year 1788, page 453, that he had heard from the ancient inhabitants of that city, that so long ago as the year 1702, a malignant fever little inferior to a plague was imported into it, which from its extreme mortality was distinguished by the name of the *great sickness*. This event is also recorded by Mr. Story in the 2d volume of his Journal. According to Mr. Hewatt's history, the yellow fever made its second appearance in Charleston in the year 1703, at which time the inhabitants were apprehensive of an invasion from the French and Spaniards. It appears from Hutchinson's history of New-England, that a similar fever was imported into Boston in the year 1693, from Martinique, by the fleet of Sir Francis Wheeler: see Hutchinson's history, vol. 2, p. 72. At the time of its first appearance in Philadelphia and Charleston, it was, and had been for several years prevalent in several of the West-India islands, into which it had been imported in the year 1686, from Siam in the East-Indies, by a fleet crowded with passengers and disappointed adventurers from that kingdom, according to the testimony of Labat, a Catholic missionary, who was sent from France to Martinique in the year 1694, to take charge of the churches there, which was eight years after that distressing occurrence.

It is also stated by Dr. Pouppe Desportes, who practised physic in St. Domingo from 1732 to 1748, in his observations on the diseases of that island, that the yellow fever, which he calls the "putrid malignant fever," was for a long time unknown in the islands, and that the first event which rendered it remarkable, was its appearance at Martinique soon after the arrival of a fleet from Siam. The regularity of its repro-

duction, however, at particular seasons of the year, he thinks, seems to require that it should be classed among the indigenous diseases of tropical climates.

Sauvages takes notice of this disease, in the first volume of his *Nosology*, p. 557, and says it was imported into Martinique in the year 1686, from Siam, by a ship called the *Oriflame*. A similar belief is expressed by Dr. Chevalier, as quoted by Dr. Lind. M. de St. Mery, in his history of the French part of St. Domingo, delivers a similar opinion with respect to the origin of the yellow fever in the West-India islands, and relates some additional facts respecting its spreading to several of the other islands; for the particulars of which, the reader is referred to the history of the French part of St. Domingo (in French) p. 700. After the year 1703 there is no record or popular tradition that I can learn of the appearance of the yellow fever in any part of the continent of North America for twenty-five years, though it continued its ravages in the islands for many years after that period, as we learn from Mr. Hughes' *Natural History of Barbadoes*, and from Warren's and Hillary's publications, as well as from Moreau de St. Mery's *History of St. Domingo*.

Mr. Hewatt, in the history already quoted, relates that in the year 1728, after an uncommonly hot and dry summer, a dreadful hurricane occurred in the month of August, and the same year an infectious and pestilential distemper, called "the yellow fever," swept off multitudes of the inhabitants, both white and black. Mr. Hewatt also mentions the occurrence of the same disease, in the years 1739 and 1740. Dr. Harris says there is no medical record of the existence of the yellow fever at Charleston previous to the account sent by Dr. John Lining of Charleston, to Dr. R. Whytt of Edinburgh, from which it appears that it was prevalent in

that city in the years 1732, 1739, 1745, and 1748; and in the opinion of Dr. Lining, it was an imported disease and contagious. I understand that you have some additional facts on this subject, preserved in the Manuscript notes of Dr. Prieleau. Dr. Harris states that he knows of no documents of the existence of the yellow fever in Charleston from the year 1748, to the year 1792; I presume he means 1794; though he recollects that it made its appearance there in the year 1761, and proved fatal to some strangers, and to one person who, he had been told, had long resided there.

At the time the yellow fever prevailed in Philadelphia and Charleston in 1699, and for several years after that period, the population was very inconsiderable, the buildings scattered, and many of them unconnected; consequently, but little of the filth and putrefaction, common to populous cities, could have existed in them at that time. There were no common sewers or covered drains, and but very few docks or wharves. The privies were not numerous; the water of the pump wells certainly was as pure as at present, nor were the grave yards numerous or crowded with dead bodies. Consequently but few of the causes assigned by the supporters of the doctrine of the domestic origin of the yellow fever had "*a local habitation or a name,*" at least to any considerable extent, and yet the disease did make its appearance and spread with resistless fury, not only in Charleston, but in Philadelphia and New-York. From the year 1703, there was an interval of twenty-five years before its next appearance at Charleston, and upwards of forty years between the first and second time of its appearance at Philadelphia or New-York. It afterwards occurred in Philadelphia in the years 1741, 1747, and 1762, and at New-York in 1748, after which it was no more heard of in this country till the year 1793, when it made its triumphal entry into Philadelphia, and marked its way with

dreadful mortality. Charleston escaped its invasion till the year following ; and New-York a year later, since which time the frequency of its occurrence and the deplorable mortality occasioned by it are too strongly impressed upon the memory of those who have survived, to need particularizing. Having now shewn, that the pestilential yellow fever made its appearance in this country at a period when there existed none, or but very few of the sources to which its origin is ascribed by those who believe it to be derived from domestic causes, let us in the next place take a view of subsequent periods, when filth and all the enumerated causes of its generation had greatly increased, and had become offensive to the senses ; and we shall find that no such disease was the consequence.

In the years 1777, 1778, and 1779, the city of New-York, and the city of Philadelphia in the year 1778, were in possession of a large army of British and Hessian soldiers, and in the years 1780, 1, and 2, Charleston was also in possession of an army of nearly six thousand foreigners. During those periods less than usual attention was paid to cleanliness, as the minds of the inhabitants were kept in a constant state of alarm and uncertainty : hence putrefying animal and vegetable substances were suffered to accumulate and contaminate the air with their noxious exhalations ; yet not a case of yellow fever occurred in either of those cities among the natives or foreigners. It is true, a great mortality occurred among the American prisoners that were confined on board the memorable Jersey prison ship, stationed in the harbour of New-York, during the hot season, with symptoms of great putridity, and the disease was contagious ; but not a case with the diagnostic symptoms of yellow fever made its appearance either among those confined on board, or among the inhabitants of that city. The American prisoners, many of them from the northern states, were conveyed from crowded prison ships to hospitals

in the city of Charleston, yet not a single case of yellow fever occurred.

At that time there were numerous docks, sewers, gutters, privies, and a variety of other sources of putrefaction in each of the cities which have been mentioned as well as for several years after that period ; and cleanliness was much less attended to by the police from that time to the year 1793, than it has been since ; yet no yellow fever spread destruction and desolation through the streets of those cities, during that interval, as it has done since the period last mentioned.

We have now shewn, that the yellow fever made its appearance in the cities of Philadelphia and Charleston at an early period of their infancy, when but very few of the causes which are supposed by those who pretend that it originates from the confined and impure air of populous towns existed. We have also shewn that for a long period after those cities had become populous, and the sources of putrefaction had multiplied, and particularly, that during those years that the British and Hessian forces had possession of those cities, at which time the enumerated domestic sources which have been so confidently pronounced to be the cause of its origin, existed with aggravated circumstances, no yellow fever made its appearance or was the consequence.

If to these facts we add the well-known circumstance of the escape in 1793 of every seaport and commercial town in the union, with the exception of Philadelphia, and recollect that it had made considerable progress, and had occasioned very extraordinary mortality in several of the West-India islands, and particularly in Grenada, St. Vincent, and Dominica, several months before it made its appearance in Philadelphia, and that when it did make its appearance, it was distinguished by an

assemblage of symptoms which had never been observed in any disease that had occurred in Philadelphia since the year 1762, and in that year, according to the notes of Dr. Redman, late president of the College of Physicians of Philadelphia, it was imported from Havana, and communicated by a seaman to the family with whom he lodged in Jackson's Court, near the New-Market; if we recollect that the disease was new to all the physicians that had commenced practice in Philadelphia since the year 1762, and that Drs. Ross and Stephens, who at that time resided in Philadelphia, (the former of whom had lived and practised medicine many years in the East Indies, and had suffered by a fever, attended with very violent and dangerous symptoms at Bassorah, on the Euphrates, in the year 1781, and the latter had been in constant and extensive practice for many years in St. Croix, in the West-Indies) had never seen a fever with the particular and extraordinary symptoms by which that disease which prevailed in Philadelphia in the summer and autumnal months of the year 1793, was distinguished; and if we bear in mind that this destructive malady prevailed in New-Haven in Connecticut, Baltimore in Maryland, and Charleston in South-Carolina, in the year 1794, while all the intermediate seaports escaped; and that in 1798, Easton in Maryland, Baltimore, including Fell's Point, Charleston and Savannah, (places noted for the insalubrity of their atmosphere in the autumnal season) escaped; while Boston, New-London, New-York, Philadelphia, and almost every other commercial town, and several of the villages on the navigable rivers in the eastern and middle states were sinking under its resistless fury; it appears a matter of astonishment, that any person of sound understanding can hesitate in deciding, whether it is of foreign or domestic origin.

To extricate themselves from the dilemma to which they have been reduced by facts and arguments similar to the preceding, some of the leading and most influential of the advocates of the doctrine of domestic origin of yellow fever, have had recourse to the power of imagination, and rejecting contagion as a vulgar error, have revived and adopted the more vulgar and exploded doctrine of planetary, cometic, and volcanic influence upon the constitution of the atmosphere extended round the spacious globe; and have dogmatically pronounced, without offering any but the most puerile and frivolous evidences in support of their opinion, that a noxious and impure change has taken place in the proportion of the constituent principles of the atmosphere; a doctrine, which is so foreign from correct observation, and so destitute of proof, that its adoption could only be excusable in the dark age of Gothic barbarism, when the human mind, unenlightened by liberal education, and paralyzed by the fears of superstition and the arts of impostors, rose in intellect but a small degree above brutal instinct. In short, to ascribe the occurrence of the yellow fever in Philadelphia, after an exemption of thirty-one years, to a noxious and *invisible* change in the constitution of the atmosphere, without furnishing direct and unequivocal proofs that such change has taken place, is one of the tricks of ingenuity to impose upon and mislead unreflecting credulity, and is no more worthy of credit or respect than the Arabian Nights Entertainments, or than the conceits of the astrologers and conjurers in the ages previous to the revival of literature, when every disease as well as every natural phenomenon not obvious to the senses, was ascribed to the influence of the planets. In point of absurdity and folly it is a match for the story related by Monsieur Poqueville, of the ignorant and credulous Greeks of the present age, who, he says, believe that a decrepid spectre to which they have given the name of Cacodæmon, always precedes the plague, dressed

in a funeral shroud, and glides along the roofs of the houses, calling the names of those who are destined to be cut off from the number of the living, while dogs howl hideously responsive to solemn music and murmuring voices which they are supposed to hear in the air.

If this puerile and superstitious notion of the modern Greeks is rejected with contempt by all men of cultivated understandings, because it does not correspond with the experience of observers qualified to discern realities from the delusions of the imagination; the doctrine of a noxious or pestilential change having been produced in the constitution of the atmosphere, being the mere creature of the imagination, and unsupported by adequate and satisfactory evidence, ought to be rejected for the same reason.

If such a revolution had taken place in the constitution of the atmosphere as is pretended, it would be unreasonable to suppose it would have operated in such an irregular and capricious manner as has been the case, if the yellow fever was the consequence or production of such a change, because it is contrary to the common course of things.

If such an extraordinary and unsalutary change had taken place, its operation would have been regular and uniform, and its influence would have extended to every place upon the globe under similar circumstances, and its presence would have been manifest from the change it would necessarily have produced on every other species of disease that owes its origin to the particular condition or qualities of the atmosphere, as well as to fevers; but no such change is observable in cases of the quincy, pleurisy, small-pox or measles, that have occurred since that change in the atmosphere has been said to have taken place. If a pestilential constitution of the

atmosphere existed, all our seaports would have suffered at the same time every year, and not one in the centre of the union this year, one in the northern extremity, and one or two in the southern extremity the next, and others in a different direction the year after, as well as in other places in an irregular manner several times since, while adjacent and intermediate ones remained entirely exempt, as we know from our own observations, as well as from the information of others, has been the case. And as no change has taken place in other diseases, as is pretended to have occurred in the fevers which appear periodically in cities, though no such change is apparent in those in marshy situations in this country, or in any other form or variety of disease, as has been satisfactorily shewn by Dr. Stringham, of New-York, in a paper relative to this subject, published in the first volume of the *Edinburgh Medical and Surgical Journal*, and as I know from my own observations, as well as from letters which I have received on this subject from Dr. Gardiner of Darby, only seven miles distant from Philadelphia, and from Dr. Martin of Easton, an insalubrious part of Maryland, it may be fairly concluded that no such change has taken place in the constitution of the atmosphere.

During the prevalence of the yellow fever in Philadelphia in the year 1793, more than two hundred persons were confined in the prison appropriated for criminals, exclusive of one hundred and six French soldiers confined there by order of the French consul, and a considerable number of debtors in an adjoining prison. The Pennsylvania hospital contained its usual number of patients at the same time. There were more than four hundred paupers in the alms-house, and more than two thousand emigrants, recently arrived from the island of St. Domingo, were at the same time dispersed over different parts of the city and suburbs. All the prisoners in the

jail, the patients in the hospital, the paupers in the alms-house, and the emigrants from St. Domingo dispersed over different parts of the city, almost to a man, escaped the disease, though they were surrounded by the sick, the dying and the dead for several weeks, and breathed the same air as the rest of the inhabitants, with the exception of that confined in the apartments of the sick.

Circumstances like these establish the fact more forcibly than a whole volume of arguments, that the disease was not an epidemic, or derived from any general cause existing in the atmosphere, or from any derangement or alteration in the quality or proportion of its constituent principles, but was propagated by contagion alone, otherwise the persons circumstanced as just mentioned could not possibly have escaped more than the rest of the inhabitants : but on the contrary, the emigrants from St. Domingo, not accustomed to this climate, would have been the first to experience its effects, and would have suffered much more severely from the impurity of the atmosphere, if that had been the cause of the disease, than the native inhabitants ; for it is a fact confirmed by long and extensive experience, and which admits of no exception, that strangers are the greatest and most certain sufferers from exposure to the causes of the indigenous diseases of the climate into which they migrate. But a contagious fever is communicated only from the sick, or articles contaminated by them. No sick persons were admitted into the prison, the Pennsylvania hospital, or the almshouse, during the prevalence of the yellow fever ; and the emigrants from St. Domingo, having arrived at Philadelphia just as the disease began to make its appearance, had formed little or no acquaintance with the inhabitants, and of course had no intercourse with the sick. This, and this alone is the true reason of their escape, and is a very strong and direct proof that the

disease was not derived from the causes which have been assigned by those who contend that it is of domestic origin and not contagious.

If the disease had arisen from the domestic sources already enumerated, or from the joint effect of these and a deranged state of the atmosphere, all that breathed the air of the city, at least, if not all round the world in the same latitude, would have suffered more or less by it, and nearly at the same time, and not in that gradual and successive manner as they have done every time the yellow fever has made its appearance in any of the seaport towns of this country, and as is observed always to be the case with all the diseases that are acknowledged to be contagious.

The symptoms, also, by which the yellow fever is distinguished from the most dangerous cases of the bilious fever that occur in any part of the world, not excepting the indigenous fevers of Batavia, Calcutta, Goree, or Surinam, which are universally acknowledged to originate from the exhalations of putrefying animal and vegetable substances, furnish additional evidence of their being different not only in degree, but in kind, and consequently that they are derived from different sources.

To infer that the yellow fever is only a variety or higher grade of the indigenous intermittent fever of this country, because it generally occurs, progresses, and terminates at the same time of year as the intermittent, is confounding or mistaking coincidents for causes. By this mode of reasoning the plague of the Levant, with all its complicated horrors, would be nothing more than a common intermittent, rendered malignant, or increased in power by the influence of a deranged state of the constitution of the atmosphere upon its cause, or

upon the constitution of the patient; for, when it has been imported into the temperate climate of Europe, from Egypt, Syria or Turkey, it has generally commenced, progressed, and terminated in the same seasons as the common intermittent. For proof of this, see Hodge's account of the plague in London, in 1665, and Mertin's account of its rise and progress in Moscow, in 1771.

If coincidence of events always depended on identity of cause, the pleurisy and the measles would depend on the same cause, and though differing in degree, and in the character of their symptoms, they would be the same in kind, and agree in their nature, and would require a similar mode of treatment; for, according to Sydenham's account, they both begin in the month of February in the climate of England, increase during the spring months, and terminate about the summer solstice.

The only circumstance in which the yellow fever and the intermittent or bilious fever do agree, is, in being both destroyed or disarmed of their noxious power by frost. This, however, only proves that the *contagious principle*, which is the cause of the yellow fever, requires the same portion of caloric to preserve its volatility, and keep it suspended in the atmosphere as the miasmata of marshes, or the exhalations from putrefying substances, and that it requires considerably less caloric to render the contagion of the typhus of temperate climates volatile, and to keep it suspended in the atmosphere. But the contagion of the yellow fever, like that of the typhus or jail fever, requires to be accumulated or concentrated in the atmosphere in confined and unventilated situations, in order to render it capable of producing any disorder in those exposed to it; and as the poison of arsenic becomes harmless by copious dilution in water, that also becomes harmless by diffu-

sion in the open air. This is the reason why the disease is so rarely communicated from one to another in country situations, where there is a constant circulation of fresh air. They, therefore, who deny the yellow fever to be contagious in any situation, because it is rarely so in the open and free air of the country, might with equal reason deny that the jail or hospital fever, the typhus gravior of systematic writers, is contagious, because it only operates in confined and unventilated situations, where cleanliness is neglected, with sufficient power to produce any morbid effect; but like the noxious gases, or other volatile poisons, becomes impotent and inactive by diffusion, or by mixture with a certain portion of fresh and untainted air. Those, therefore, who seem to think it so very extraordinary that the yellow fever, if contagious, does not produce the same noxious effects in the country as in the confined and less pure air of a populous city, I refer for a satisfactory explanation to a collection of facts on this subject published in Dr. Barton's Medical and Physical Journal, vol. 2d, part 1st. I shall now conclude with observing, that if the circumstances stated and detailed in the preceding pages are authentic and correct, and I challenge any person to disprove them, every disinterested and unprejudiced inquirer that examines and compares them with the facts and arguments of the advocates of the domestic origin of the disease must be convinced, that the yellow fever has never originated from domestic causes in this climate, but is exclusively of foreign origin.

TREATMENT.

My experience convinces me that bleeding is not only useful but absolutely necessary during the first two days of the disease, in all cases where inflammatory symptoms evidently predominate, especially when strong and quick pulsation of

the temporal and carotid arteries indicate local increased vascular action in the system, and particularly in the head. The quantity of blood to be drawn and the frequency of repetition should always be proportioned to the violence and urgency of the inflammatory symptoms; but, great caution should be observed in repeating this remedy after the second day of the disease, especially in any large quantity, unless mercury has been given from the beginning and has begun to affect the mouth, as it has been observed frequently to induce or to increase the new and more dangerous train of symptoms, which in very dangerous cases usually occur at or soon after the beginning of the third day. A repetition should also be avoided, if the patient's general strength as well as that of his pulse, is very much reduced after the first operation, as in cases where nervous or putrescent symptoms have existed from the commencement, or have come on in the course of the fever, bleeding has done irreparable injury.

Purging is proper under the same circumstances, and with the same limitations as blood-letting, and ought to be regulated in the same manner.

The late **Dr. Hodge** has repeatedly assured me, that he has frequently arrested the course of this disease by bringing on an artificial cholera morbus by means of a solution of tartarised antimony exhibited at short intervals immediately after one copious bleeding. But as in this fallacious disease, the inflammatory symptoms are very often suddenly followed by those of an opposite character, and as mercury after it has entered the system, has been found a more certain preventative of this unfavourable and dangerous alteration in the character of the disease, than any other remedy, purges in which it is a principal ingredient, should have the preference. In

such cases the strictest observance of the antiphlogistic regimen has been found beneficial, and the application of linen cloths, wet with cold water and vinegar, to the fore part of the head alleviated the excruciating pain of that part. Wetting the face and hands frequently with a cloth dipped in cold water, has also a cooling and refreshing effect.

In this stage of the disease the affusion of cold water, during the exacerbation of the fever, as recommended by Dr. James Currie, in cases of typhus fever, has been found highly beneficial in reducing the febrile heat and bringing on a more sensible remission; but, (when the pulse is strong and the heat great) wetting the surface of the body, (including head and limbs) with cold water, or vinegar and water, by means of a sponge or napkin, and repeating the application before it becomes entirely dry, is more certain in allaying the preternatural heat, and reducing the action of the heart and arteries. This application appears to produce those salutary effects by the evaporation of the water which abstracts and carries off the febrile heat with it.

This form of the disease resembles the eruptive fever of the small-pox, and is generally subdued by the same remedies that render the pustules distinct, and the subsequent symptoms mild. When, however, the recited means were neglected or applied too sparingly or irregularly, the inflammatory symptoms were generally succeeded by those of a malignant aspect.

From recent occurrences, I am satisfied that mercury judiciously and guardedly employed, after the activity of the arteries have been reduced by bleeding and purging in conjunction with the external application of cold water, is the remedy most to be relied on in every form or variety of this disease, so long as the external heat of the skin is considerably

greater than in health. The cold water should be applied by means of a sponge or napkin at the commencement of the fever, when the heat of the skin is greater than in health, and the mercury should be given so as to affect the mouth, before the period at which the symptoms of the second stage usually come on. For this purpose, after the operation of the mercurial purge, I have found two grains of calomel given every two, three, or four hours day and night, according as the stomach would bear it, and the application of two drachms of strong mercurial ointment to the body three times a day, answer more certainly than any other method of employing it, observing to combine the calomel with opium when it affects the bowels too much, or to give it at longer intervals.

When not employed till the accession of the second stage, at which time the stomach was generally disordered it constantly aggravated the disease, and hurried on the fatal symptom of *black vomiting*.

In this stage of the disease, when a disordered stomach is the predominant symptom, which dissections shew to be owing to the inflammation of its surface, topical bleeding, by means of cupping-glasses or leeches, or when pressure with the hand on the stomach occasioned acute pain, and the pulse though small in volume, continued hard and tense, bleeding from the arm, repeated at short intervals, the frequent exhibition of mild laxatives in small doses, particularly Epsom salts, soda phosporata, soluble tartar, castor oil, an infusion of senna and cream of tartar; and when these could not be retained on the stomach, laxative clysters were the most useful remedies, especially when immediately followed by the application of blisters to the stomach, wrists, and ancles. A so-

lution of the carbonate of soda in water, which is much more palatable than the vegetable alkali, followed by a spoonful of lemon juice, or a solution of cream of tartar in water, had also the effect sometimes of allaying the distressing propensity to puke, so common in the second stage of this disease, after the febrile symptoms appeared to have subsided. But these means as well as every other that I have ever seen employed, were too frequently of no avail.

At the city hospital in 1805, a table spoonful of acetated potash in a draught of warm sage tea, as well as salt of wormwood and lemon juice given in a state of effervescence, frequently settled the stomach, particularly when preceded by the warm bath; and a return of the vomiting in many cases was prevented by the application of blisters to the back or stomach and to the wrists and ankles, immediately after being removed from the bath. Perspiration was also sometimes promoted in this stage, by small and repeated draughts of an infusion of eupatorium perfoliatum, or, when that was disagreeable to the patient, by an infusion of dittany or sage.

The vomiting as in other diseases was also sometimes alleviated by a table spoonful of the following mixture taken immediately after every effort to vomit—

R. Succ. limon. ℥vi.

Sal. alk. vegetab. (pearl ash) q. s.

Saturare cum succ. limon. cui add, aq.

Menth. simp. ℥iij. et 1-4 misce.

Some of my medical friends have assured me that they found good effects from the use of the artificial Seltzer water, in cases of alarming debility, attended with almost incessant vomiting.

When the patient complained of a burning sensation in the stomach, calcined magnesia in large and repeated doses mixed with mucilage of gum arabic, or with sweet milk and water frequently afforded relief. Where no remedy could be retained on the stomach, injections, consisting of from half an ounce to two ounces of spirits of turpentine, and three or four ounces of warm water, were administered by the physicians of the city hospital and repeated at short intervals, till they occasioned tenesmus, after which the vomiting frequently, but by no means generally, ceased, and the stomach retained such medicines or nourishment as were prescribed. It is with regret I have to add that a majority of the patients died notwithstanding this effect of the terebinthinate injections in suspending the vomiting; the inflammation, which from no abscess being discovered in the stomach of any one that died of this fever, being probably of the erythematous kind, spread through the whole surface of the intestines.

As dissections shew that the constant propensity to puke upon taking any thing into the stomach, which so generally occurs on the third day from the attack in this disease, depends upon an inflammation of the surface of that organ, and as the indication is to remove this inflammation, what effect would iced water or iced cream have upon it?

Cupping upon the stomach, or drawing blood by leeches, and the application of blisters, are certainly indicated in this state of the stomach, but I have no experience of the effects of cupping or leeches in such cases.

In more than one case, the disorder of the stomach ceased immediately after the application of a large poultice of the flower of mustard to it and to the feet; in another, lime water diluted with simple cold water, removed the complaint :

This was given in small and repeated draughts, viz. one table spoonful with the same quantity of sweet skimmed milk.

I have a favourable opinion of the warm bath in this state of the disease, when disorder of the stomach appears to be the most predominant symptom, especially when aided by the application of blisters or sinapisms, immediately after coming out of the bath. But I have seldom had an opportunity of employing the warm bath in private practice for want of suitable assistance; for rendered callous by the dread of contagion,

“Dependants, friends, relations, love himself,
Forget the tender tie,
The sweet endearments of the feeling heart.”

In the second stage of the disease when disordered stomach and apparent debility, were the most remarkable symptoms, stimulating remedies and an invigorating regimen appeared to be indicated, but the inflamed and irritable state of the stomach, rendered them inadmissible and highly dangerous.

In these circumstances the internal use of mercury alone or combined with opium, always increases the propensity to puke, and when it failed to purge, aggravated the complaint and the external application except when begun with at an earlier period of the disease, seemed to have no sensible effect. Dr. Davidson of St. Lucia in a letter to Dr. Buxton, dated October 14th, 1801, recommends for the distressing vomiting which so generally attends the second stage of this disease, a clyster of assafœtida, with the addition of two hundred drops of laudanum, and afterwards the extract or tincture of opium, to be given by the mouth at proper intervals, to prevent the return of this dangerous symptom, and he asserts that though he has seen this complaint aggravated by

opiates, given by the mouth, they have always afforded relief when given in clysters.

Whether under these circumstances, laudanum given as recommended by **Dr. Davidson** is entitled to the encomium he bestows upon it, my experience does not qualify me to determine, but **I** have employed it several times in the quantity of sixty or eighty drops in warm carminative clysters, in cases where vomiting appeared to be owing to exhaustion, from too copious depletions, with the most immediate and sensible benefit.

In cases of black vomiting, which is generally a hopeless symptom, **I** am greatly deceived if **I** have not sometimes seen laudanum in moderate doses produce good effects when given in a clyster made of a strong decoction of **Peruvian bark** and **snake-root**, frequently repeated. This dreadful symptom, however, has been more frequently relieved by a mixture of equal parts of lime water and new milk, taken from one to four table spoonfuls every hour or oftener, than by any other remedy, when employed on the first appearance of that symptom.

In the year 1798, in the case of **Mr. Fendal**, it completely relieved the vomiting, and he recovered after he had been reduced to the most hopeless extremity.

Several instances are mentioned by **Dr. Hosack** of its success, at **New-York**, and the late **Dr. Vaughan** informed me that one had recovered by the use of it, under his direction at **Wilmington**. Perhaps this remedy from its sedative and mildly astringent quality, as well as from its correcting the acid which generally abounds in the stomach, previous to the commencement of the black vomiting, would be more effica-

cious in preventing than in removing the black vomiting, if employed earlier in the disease.

In one case under my care, given diluted with water, it settled the patient's stomach when neither effervescing mixtures nor clysters with laudanum had any effect. In another case, twenty grains of the carbonate of soda, dissolved in cold water had a similar effect.*

When the disease began with weak pulse, general debility, considerable oppression about the præcordia, and great restlessness, accompanied with deep and frequent sighing, I considered myself justifiable from the analogy of the disease with the putrid or ulcerous sore throat, and from my constant failure with every other remedy, as well as from the experience of Dr. Chisholm, (who first employed mercury for the purpose of producing salivation in this disease), to have recourse to mercury, guarding it from passing off by stool, by combining it with opium, if the bowels were disturbed by it, carefully guarding against any considerable evacuation till the mouth became affected; and would advise to begin with it as soon as possible after the commencement of the disease. Confiding in the correctness of Dr. Patterson, a physician in the British army, who declares in a letter to Dr. Chisholm, that he had found the early application of blisters to the stomach and limbs prevented a determination to that organ, I have in every case when I prescribed mercury, directed a large blister to the stomach, and smaller ones to the wrists and ancles, at the same time; and after the removal of the

* Dr. Dalcho of Charleston says he gave aq. calcis to several patients in the year 1805, whose stomachs were greatly disordered, and that it generally settled them and prevented the black vomit.—Dalcho's Oration before the Medical Society of Charleston, published in Coxe's Museum for June and July 1806.

blisters, have dressed the excoriated surface with strong mercurial ointment, and directed the ointment to be rubbed on different parts of the patient's body at the same time, when insuperable prejudices were not opposed to its use.

Though my success with this mode of treatment has not been very flattering, it certainly failed more seldom than any other method that I have hitherto had an opportunity of seeing tried, and if I could conveniently have employed the affusion of cold water as an auxiliary, I have reason to believe it would have been much more successful.

In every case, however, that has come under my observation, where the employment of mercury has been deferred till after the dangerous and distressing symptoms of the second stage have come on, it has either aggravated the distress and increased the danger, or has been of no avail; and when employed after signs of putrescency or scorbutic symptoms have made their appearance, such as purple spots on the surface and hæmorrhagies from the mouth and other parts of the body, it has invariably accelerated the fatal event, notwithstanding the declaration of Dr. Chisholm and others to the contrary. Hæmorrhage from the nose, however, at the beginning or during the first stage, was generally beneficial.

I am convinced from a comparison of the success attending different modes of treating this disease, that mercury when employed from the beginning or early in the first stage of the disease and skilfully conducted is more efficacious than any other remedy, especially when suitable auxiliaries are employed at the same time. It is certain that very few have died after salivation has been produced, and I am inclined to believe that the difficulty of producing this effect, is frequent-

ly owing to the want of applying the remedy on the first appearance of the disease, and regulating the action of the arterial system, at the same time, according to the indications of the symptoms.

But when mercury is given late in the disease, or at any period after the stomach has become constantly disordered, it is not only an uncertain remedy but one of the most dangerous and destructive poisons that can be employed.

ORDER II.—*PHLEGMASIÆ*.

THE phlegmasiæ or topical inflammations accompanied with fever are a very numerous assemblage of diseases. Their great characteristics are, the general symptoms of fever, and a topical inflammation attended with pain and disorder of some important function. And in most instances, when blood is drawn, it is found upon coagulation to be covered with a sizy or glutinous skin or film resembling tough jelly. Under this order many important genera are comprehended, each requiring a separate consideration.*

* The remaining orders of pyrexia, with the exception of the exanthemata, viz. the phlegmasiæ, hæmorrhagiæ and profluvia, differ essentially from the order of idiopathic fever; for in the latter orders the fever is always the effect of the local affection, and is so constantly proportioned to it, that we can almost always judge with precision of the violence of the local affection, by observing that of the febrile symptoms. For this reason Dr. Alexander P. Wilson, a writer of acknowledged ingenuity, in his *Treatise on Febrile Diseases*, has divided the pyrexia into two classes, viz. idiopathic and symptomatic. This writer says we are to look for the *proximate cause* of inflammation in the capillary arteries, and not in the larger ones. This he thinks consists of a morbid distension of the capillaries, and the necessary consequence of this distension an increased action of all the

OF PHRENITIS,
OR
INFLAMMATION OF THE BRAIN.

THIS disease (which belongs to the phlegmasiæ or second order of the first class, and ninth genus of Dr. Cullen's nosology) is an inflammation of the parts contained within the cavity of the cranium, and may affect either the membranes of the brain or the substance of the brain itself.

The symptoms by which phrenitis may be most certainly known, are a vehement pyrexia, a violent deep seated headache, a redness and tingesence of the face and eyes, an impatience of light or noise, a constant watching and furious delirium.

The *remote causes* are the same as those of inflammation in general, operating more directly upon the head. And the

larger arteries from whence the capillaries arise. In other words, "inflammation seems to consist in a debility or want of due resistance in the contractile power of the capillaries, in consequence of which the blood impelled into them in the course of the circulation distends them and stagnates, or at least loiters too long in them, the consequence of which is that the larger vessels from which they are immediately derived, are morbidly distended and stimulated to a stronger and more frequent action to relieve themselves from the stimulus of distension. The inflammation terminates as soon as the capillaries are so far excited, and the larger arteries so far weakened by their excessive action, that the force of the capillaries is in due proportion to the force *a tergo*."

cure of phrenitis is the same with that of other inflammations ; but in phrenitis the most powerful remedies are immediately requisite.

TREATMENT.

From twenty to forty ounces of blood should be drawn in as short a time as practicable, from vessels as near as possible to the head, and repeated in less quantity every six or eight hours at farthest, till the symptoms are considerably abated, particularly from the jugular veins, or from the temples, by scarifying and cupping. A puncture may be made with a lancet in the artery of one of the temples with perfect safety by a person accustomed to surgical operations, and the bleeding stopped with ease by moderate and steady pressure.

Immediately after the first bleeding several folds of linen wrung out of cold water should be applied to the head previously shaved and cupped, and renewed as often as they become nearly dry.

Purges which operate speedily and copiously are the next remedy to be employed.

℞. Pulv. jalap. ʒj.

Calomel. ʒss.

Crem. tart. ʒij

Misce. et f. chart. no. iij.

One to be given every two hours till they begin to operate, and the operation to be promoted by thin gruel or barley water.

If jalap is not preferred, an ounce of salts and half as much senna infused in a draught of boiling water, sweetened

with manna or brown sugar and the addition of one grain of tartarized antimony may be given, and half that quantity repeated every two hours till it operate six or eight times, or from five to ten grains of calomel, and twice as much jalap made into pills may be given every three or four hours till they have the desired effect. But no kind of anodyne must be admitted after the operation, otherwise it will aggravate all the inflammatory symptoms. When the pulse is nearly as low as in time of health, and the skin continues to be hot and dry with symptoms of delirium, the following antimonial powders will be proper.

℞. Tart. emetic grs. iij.

Pulv. sal. nitri. ℥iij. misc. f. chart. No. XII.

The patient is to take one of these powders every second, third or fourth hour, according to the violence of the symptoms, dissolved in a draught of cool beverage, barley water, or toast and water, and continue those or similar drinks, acidulated with vegetable acid, from the commencement to the termination of the disease. No aliment except barley water, or thin oatmeal gruel, should be allowed during the continuance of the delirium and fever. The remedies most to be depended on are, copious bleeding, cupping, and the application of vinegar and cold water, or ice to the head. Blisters should be applied to the head, as soon as the blood vessels have been freely emptied; but when applied before copious depletion of the blood-vessels, they have not appeared to have had any sensible effect upon the complaint. It is of the greatest importance to keep the patient's chamber not only temperate, but in a condition which to a person in health would feel disagreeably cold. When the season prevents this, it should be ventilated as much as possible, and all the drinks given cold, except while a purge is operating, and even then not more than of tepid warmth.

Light should be excluded as much as possible, compatible with free ventilation, and no conversation or noise allowed in the chamber.

The delirium which I have frequently met with in practice, soon after parturition, in consequence of too long exposure to cold, particularly in persons whose labour has been tedious or difficult, usually called **Puerperal Mania**, from the circumstances and situation of the patients in whom it occurs; I have repeatedly seen completely cured by the same remedies as those directed for the cure of the most furious delirium.—For though the pulse is not hard or tense at the wrist, it is always more or less tense and preternaturally frequent in the temples and carotids—and dissections have shewn that it depends on an inflammation of the substance of the brain.

OF THE HYDROCEPHALITIS,

OR THAT AFFECTION OF THE BRAIN, WHICH IN INFANTS AND YOUNG CHILDREN, USUALLY TERMINATES IN AN EFFUSION OF WATER INTO THE VENTRICLES, COMMONLY CALLED **HYDROCEPHALUS INTERNUS**.

THIS disease is confined almost exclusively to infants and children under the age of ten years, (though, it sometimes appears at a much later period), and is one of the most insidious and dangerous of the diseases which occurs.

It sometimes comes on suddenly and cuts the patient off from the number of the living, in a few days; but it frequently comes on more gradually, and in such cases is several weeks

before it terminates; and when it does terminate after being protracted so long, it generally terminates fatally.

The symptoms of the Hydrocephalitis, for the first two or three days, bears such a strong resemblance to an irregular remittent, or to the symptoms which are supposed to arise from difficult teething, and in infants at the breast to certain affections of the bowels, that physicians are apt to be misled with respect to the real nature and seat of the disease, till it becomes firmly established, and the accession of the symptoms of the second stage, convinces them of their mistake.—We however, ought always to suspect the existence of that inflammation or congestion in the vessels of the brain, which precedes the effusion of lymph into its ventricles, when the patient has a flushed face, contracted pupils, hot skin, and preternaturally quick and irregular pulse, accompanied with obstinate costiveness, and especially if he shuns the light, covers his eyes, and puts his hands frequently to his head, and is restless and peevish, and after a short or partial sleep, wakes suddenly, screams out, and if at the breast, sucks with avidity, or bites the nipple with violence, and moans like one in pain or great distress.

When the patient is of an age to describe his feelings, he complains of his head and the back part of his neck “hurting him;” is feverish, restless and peevish, and feels sick, and attempts to puke upon being held up, though in this stage he seldom brings off much from his stomach.—After a few days however, he becomes drowsy, silent and sullen, and has a very great aversion to any kind of motion or disturbance; at length however, the disease, unless early relieved by art, takes on a new form, in consequence of the water which escapes from the over distended and relaxed extremities of the lymphatic arteries, and is deposited in the ventricles of the brain.

This change in the aspect and nature of the symptoms in some is sudden and instantaneous, while in others it is much more gradual, but which in proportion as the effusion has been in greater or less quantity, points out with more or less certainty the existence of the second stage of the disease.

The congestion of the sanguiferous vessels of the brain being reduced, by the effusion of lymph into the ventricles, the pain of the head and febrile symptoms generally intermit for some hours, and the patient appears to be so much relieved of his disorder, that his relatives and attendants are deceived into an expectation of his speedy recovery.—The patient however, cannot bear to be lifted up or held in an erect posture without becoming sick at stomach, and making efforts to vomit, and sometimes vomits incessantly till again laid in a horizontal posture.—The pulse however, soon become quick again, the skin hot and dry, and the tongue white; the costiveness also continues or returns, and for some time the eyes and pupils retain the healthy appearance which they had resumed after the commencement of the effusion, but as the ventricles become distended by the accumulating water, the face exhibits transient flushings, resembling the blush of a person of exquisite sensibility; the pupils become dilated, and when the distention of the ventricles from the accumulating water has increased to a certain extent, the pupils become remarkably large, accompanied with strabismus or squinting, and insensibility to light, which are gradually followed by lethargy, and generally palsy of one side, and finally stertorous breathing, apoplexy, or convulsions and death, previous to which the patient lies with his eye-lids half open, and his eyes turned towards his nose, and so far upward as to leave only the opaque cornea visible.

For some time previous to the accession of coma, dilated

pupils and strabismus, the pulse becomes so frequent, in consequence of the irritation from the effused fluid in the ventricles, that it is almost impossible to count it; the number of pulsations sometimes exceeding one hundred and sixty in a minute.

This disease as characterized by the state of the pulse and the sensibility of the pupils of the eyes, may be divided into three stages. In the first the pulse is frequent, irregular, and generally full, but never tense or hard, that I have observed; the head is in pain, the face red, the pupils remarkably small and contracted, the tongue white, and the skin hot and dry, especially about the head and neck.

In the second stage the symptoms of pain and all the febrile symptoms, subside for a short time, and the pupils of the eyes resume a healthy appearance, though the patient at this period generally feels sick at stomach when lifted up or raised from his pillow, moans when laid down again, and has an aversion to motion or any kind of exertion.

In the third stage, the pulse, which in the second stage had apparently returned nearly to its healthy state, again becomes preternaturally frequent—the pain of the head returns, attended with great thirst, white tongue and hot skin, which after a longer or shorter duration in different cases, are succeeded by constant drowsiness, interrupted sleep, slower and more irregular pulse, accompanied with great moaning and frequent and sudden screaming; and when the patient has teeth he frequently grinds them with great violence; all of which are succeeded by the symptoms of the third and last stage, which have already been enumerated.

It is evident from the appearance of the brain of persons

who have died of this disease, that the inability to bear the stimulus of light in the first stage of this disease, and the insensibility to its stimulus in the last stage, accompanied in the former with preternatural sensibility and remarkable contraction of the pupils, and in the latter stage with a preternatural dilatation and insensibility of the same, arise from opposite conditions of that organ. The former depending on an inflammation or congestion peculiar to the first stage of this disease in persons of a certain age, the latter supervening in the latter stage, in consequence of effusion and the distension and compression occasioned thereby.

CAUSES.

From the appearance of the brain in the dissections which I have seen and a comparison of the symptoms which precede and usually attend the first stage of this disease, with those of other affections of the brain or its membranes, I am of opinion that it partakes more of apoplexy than of phrenitis. The proximate cause of the former of which is an impaired power, and consequent congestion of blood in the larger trunks of the arteries of that organ, and designated by more or less insensibility and propensity to lethargy; whereas, according to the theory or pathology of Dr. Alexander P. Wilson (a physician of great research and ingenuity, who has published a treatise on febrile diseases) in cases of phrenitis, the action of the capillary arteries is weak when compared with that of the larger blood vessels, and the disease is distinguished by great muscular exertion and mental raving, wakefulness, and fury.

It is therefore presumable that the predisposing causes are, previous fever of the intermitting kind, or any other disease,

which has the effect of determining the circulation more forcibly to the brain than to other parts of the system; perhaps the abuse of anodynes may also be considered as one of the most frequent though the least suspected of the predisposing causes.

The most usual of the occasional or efficient causes are, long continued vomitings, by which the blood is forced into the weakened vessels of the brain; but blows on the head or sudden concussion of the brain by falling upon the head, are the most usual predisposing, as well as occasional causes of this very dreadful and distressing disease.

As it is improper to name a disease from the symptoms or phenomena which it exhibits, after it has come to a crisis or changed its character, I have thought it advisable to adopt the name of hydrocephalitis, as it conveys a more correct idea of the nature of the disease, while it retains its original nature, form and character. In a state of perfect health all the four cavities of the brain do not contain more than from one half to a whole ounce of clear lymph; whereas in persons who have died of this disease, and whose brains I have seen opened they generally contained more than four ounces, and in some cases nearly twice as much.

TREATMENT.

No one acquainted with the nature and usual progress of this disease will deny that if there be any means adequate to arrest it in its course, they must be for the most part employed promptly and assiduously in the early part of the first stage. To accomplish this desirable end with the greatest certainty, one of the temporal arteries should be opened.

Dr. Dorsey, adjunct professor of surgery in the University of Pennsylvania informs me, that this operation is directed to be performed by Dr. Physic, professor of surgery, who is celebrated for the dexterity and success of his operations, in the following manner, viz. when the temporal artery pulsates so strongly that it may be distinctly seen, it may be very readily opened with the point of a lancet; but when the artery is not so superficial as to be distinctly seen, its precise situation and course may be ascertained by feeling its pulsations; in these circumstances it can be readily divided with the end of a sharp scalpel. The bleeding can be restrained without difficulty by applying a compress over the orifice, which is to be secured in its situation by a bandage passed round the head. When however this operation is not submitted to, the patient should be held or propped up in an erect posture, and blood drawn from one of his arms, from a large orifice, with as much expedition as possible, till symptoms of fainting or approaching convulsions indicate that the vessels of the brain are sufficiently unloaded, which ought to be the signal to desist.

As soon as recovered from the immediate effects of bleeding, the patient should take, according to his age, from one to five grains of calomel, mixed in a spoon with any agreeable syrup or preserve, every hour till it has the effect of opening the bowels, three or four times at least, having previously shaved the whole head and covered it with a double linen napkin or compress, wet with cold water and vinegar, mixed together in equal quantities, and renewing it as often as it becomes dry.

As soon as the operation of the calomel appears to be over, if symptoms of fever and congestion still exist, the bleeding should immediately be repeated to nearly the same extent as

at first, and immediately after its operation a large blister should be applied over the whole head, and one to both wrists and ancles; or, if the stupor has increased, sinapisms to the soles of the feet, and the calomel should be repeated again as at first. But if the eyes appear red and prominent, and the pupils enlarged, without being accompanied with strabismus, instead of drawing blood from the temple or arm by means of a lancet, cupping glasses or leeches should be substituted—or after the application of leeches, cupping glasses may be applied to the orifices which they have made. When the disease occurs in remote parts of the country, where these can not be procured, the skin may be scarified to some depth with the point of a lancet, and a common small decanter applied to the punctures the instant the hot water, with which it should first be filled, has been poured out of it, which in consequence of the vacuum occasioned by the heated water, will occasion blood to flow into it from the punctures, if properly managed.

When the operation of the calomel is tardy, it may be quickened by giving a small draught of the common infusion of senna leaves, between the doses, or a small dose of jalap and cream of tartar, a solution of epsom or glaubers salts, sal soluble, &c. or if these are refused by the patient, recourse should be had to purging clysters.

When from too long delay, in the employment of the recited remedies, or from the too sparing or injudicious manner of applying them, or from the inefficacy of their power to arrest the disease in its progress, and prevent it from ending in a dropsy of the ventricles; the change in the nature and form of the disease, requires a change in the nature and form of the remedies.

The tone and power of resistance of the exhaling arteries being impaired in consequence of the preceding congestion and distension of the larger arteries from whence the exhalents proceed, admits a greater quantity of watery fluid to escape and flow into the ventricles than usual, and consequently than the absorbents are capable of taking up and disposing of; hence it accumulates, distends the brain and presses against the nerves at their origin, and renders them insensible to customary impressions; hence the propensity to slumber, and as the quantity of this fluid increases, the pupils of the eyes become enlarged and insensible to the stimulus of light, accompanied with strabismus, and turning the eyes upwards, only the whites of the eyes being visible, and the eye lids remaining half open.

Here the indications of cure are in a great measure the reverse of what they were in the preceding stage and state of the disease, though our attempts should still be directed to withdraw from and to prevent a return of the determination of the circulating fluids to the brain, and by that means any farther effusion of watery fluid into the ventricles, while we at the same time employ such remedies as have the effect of increasing the tone and power of the exhalents, and promoting the action of the absorbents of the system in general, and of the ventricles of the brain in particular.

With this view fresh blisters should be applied to the head and limbs, unless those which had been applied in the former stage of the disease still continued to be considerably inflamed, in which case they need only be dressed with basilicon with the addition of a little red precipitate, finely powdered cantharides, or powdered savin leaves. The antiphlogistic regimen, though not with the same strictness, is also to be continued.

Small doses of digitalis are to be administered at stated intervals of from four to eight hours, of which either the powder of the leaves lately dried in the shade, or the spirituous tincture, may be prescribed at the option of the physician. From half a grain to two grains of calomel should also be given every four hours between the doses of the digitalis, so as to alternate with each other, and continued daily till a swelling of the gums and soreness of the inside of the cheeks are the consequence, or a salivation begins to make its appearance. As a salivation, however, can rarely be produced in infants or young children, we must judge from other appearances when the mercury has sufficiently pervaded the system of the patient, the principal of which are, a greater fulness of the pulse, with redness of the face and inside of the cheeks, accompanied with offensiveness of the breath, small vesications on the tongue and inside of the lips, and especially when a more favourable change takes place in the symptoms which had denoted the existence of water in the brain. After which the calomel should be discontinued for a day or two, and afterwards repeated at longer intervals and in smaller doses, till every morbid symptom appears to be completely subdued.

The digitalis should also be discontinued as soon as it has had the effect of rendering the pulse a few strokes slower than it usually is in patients of the same age, when in health; but may be occasionally resumed as the accelerated state of the pulse may require in the course of the disease.

The precautions requisite to be observed in the use of digitalis may be seen by turning to the chapter on phthisis pulmonalis, where they will be minutely specified.

Mercury should never be given in large quantities or at short intervals in this disease, as for want of observing this precaution, I have known it, instead of occasioning salivation, to bring on an inflammation of one of the cheeks or of the jaw of one side of the face, which in spite of all the usual preventatives, ended in a mortification, which either speedily deprived the patient of his life, or if he recovered, left him a deformed and shocking spectacle the remainder of his days.

When mercury cannot be administered inwardly in this disease, either alone or united with a due proportion of opium, or any other medicine, without disordering the stomach or bowels, every one knows that the external application of the blue mercurial ointment will produce the same effect as mercury taken inwardly. The quantity and manner of employing which, may be seen in the works of all the modern authors.

OF THE
CYNANCHE TONSILLARIS, ANGINA, QUINSY,
 OR
INFLAMMATORY SORE THROAT.

THIS name is applied to every inflammatory affection of the internal fauces.

But these inflammatory affections are not only different on account of the particular part in which they are seated and the constitution of the patient, but from the nature of the causes by which they are produced.

In Dr. Cullen's Nosology the cynanche (which is his tenth genus) is divided into five different species. But as minute distinctions are more apt to perplex and confuse, than to elucidate or direct to successful practice, I shall include them all, except the cynanche typhoides, (or putrid sore throat), and the cynanche trachealis, under the title of cynanche phlogistica or inflammatory quinsy.

When the tonsils, palate and fauces are swollen and inflamed, attended with an increase of pain and difficulty in deglutition, and an acute pain, sometimes darting into one or both ears, the disease is properly entitled to the name of cynanche phlegmoides, or inflammatory quinsy. Under these

circumstances the pulse is always strong and quick, the skin hot and dry, and the thirst great.

The disease is usually ushered in by a chilly fit or alternate successions of chills and heats. After which the pulse becomes quick and strong, and sometimes hard and tense. This disease is never contagious, but is generally produced by exposure to unusual cold, especially after the body has been debilitated by fatigue, or has been overheated by violent exercise.

This disease frequently terminates by resolution, sometimes by suppuration, but very seldom ends in gangrene.

It occurs more frequently in the winter and spring than at any other time. The inflammation is commonly most considerable in one tonsil at first, but before that abates it generally extends to the other.

TREATMENT.

The remedies which have been found to afford the greatest service in this complaint, in general, have been early venesection, saline purges, blisters upon each side of the throat over the tonsils, and the following gargle.

℞. Pulv. borax ℥i.
Acet. vini. ℥ij.
Aq. communis ℔ss. misce.

This should be used cold and should be frequently repeated. A gargle consisting of the sulphuric acid and cold water, according to Dr. James Sims, is still more effectual.

Dr. Kulin has found benefit in his practice from the vapour of vinegar, and the common domestic remedy of nitre and sugar-candy laid on the tongue, which he thinks are as effectual, if not more so, than the gargles usually recommended. When the tonsils are greatly inflamed and painful, it will be proper to scarify them with a lancet. If they suppurate they may be opened with a small trocar passed through a silver canula. For the method of performing these operations, consult Bell's Surgery, vol. V.—or Smith's Abridgment of John Bell's Principles of Surgery, in one volume.

The antiphlogistic regimen which consists principally in avoiding all stimulating or heating substances, is strictly to be observed in order to effect a speedy cure.

The common practice of wrapping flannel about the neck in the early stage of this complaint, appears to be very injudicious, as the heat occasioned thereby must prove too stimulating. The volatile liniment or rubefacients are supposed to have a salutary effect, as they operate in the manner of epispastics, only in a lower degree. An effusion to the surface, however occasioned, frequently unloads and takes off the tension from the internal vessels. Black pepper in fine powder, with as much brandy or other distilled spirits as will make it into a soft paste spread on leather and laid upon the outside under the chin, and moistened again as it becomes dry is recommended by Dr. Falconer in preference to volatile liniment in cases where blisters are not readily submitted to. This seldom blisters, yet affords considerable relief. Dr. Withering says he has "used emetics in the cynanche tonsillaris, angina, inflammation or true quinsy, for many years with the greatest success. If the vomit is given on the first or second day of the disease and the patient keeps in bed, drinks gruel freely, and takes the tartar emetic in smaller doses to promote perspi-

ration, he rises perfectly cured." In general the most urgent symptoms are instantaneously relieved, and in a day or two, sometimes with, sometimes without repeating the emetic, the patient is quite well. Dr. W. adds that he never directs any other medicines either internal or external, except an injected gargle to promote the discharge of viscid mucus.

In the cases of this disease, however, that have come under the management of the editor, he has generally found bleeding, purging and antimonials as necessary as in any other phlegmonous inflammation.

OF THE CYNANCHE TRACHEALIS,

OR INFLAMMATION OF THE LARYNX, COMMONLY CALLED

THE CROUP OR HIVES.

As this disease occurs most frequently in infants and young children, though it sometimes attacks adults, I shall confine my description of it to its appearance in children, from which its existence in adults will be easily understood.

This disease is preceded by fretfulness, lassitude and drowsiness. It generally begins with a cough, resembling that of the catarrh, or common cold, but this cough is frequently accompanied with a peculiar shrill sound even from the first. This cough in the course of two or three days becomes almost incessantly troublesome; it is then necessary to watch

the patient with great attention. The dangerous attack is commonly made in the night, sometimes soon after the child is put to bed, but more frequently about midnight.

The cough has a shrill, hoarse, dry, ringing sound, and returns in redoubled fits, the first of which, though very violent, is succeeded in a few minutes by a second, longer and more violent, and at its commencement is always accompanied with feverish symptoms, which as well as the cough and dyspnoea generally remit in the morning; but are again renewed towards evening or in the course of the following night. The face becomes swelled and flushed, and the eyes protruded, during the exacerbation of the paroxysms; a general tremor takes place, and there is a kind of convulsive struggle to renew respiration at the close of each fit of coughing. *There is no expectoration* at this period of the disease. As the complaint increases the coughing fits generally become more troublesome in the evening and fore part of the night; sometimes they become less frequent, but an incessant difficulty of breathing comes on, accompanied with an enlargement of the throat about the upper part of the larynx. The head is thrown back in the agony of attempting to escape suffocation, and the whole extensors of the trunk and of the legs, are sometimes thrown suddenly into action, to assist the effort, so that the whole body is bent backward as in tetanus. In this attitude and in this effort the patient generally expires. But in other cases the disease, after continuing some time, appears suddenly alleviated, the breathing is free, the child suddenly becomes cheerful, his appetite for food returns, he amuses himself, and appears perfectly relieved of his disorder, and the hopes of every one are raised only to make the disappointment more keen; for the child soon grows worse and dies, his livid and swollen face and convulsive struggles giving him the appearance of one that is strangled.

When the croup is favourable, it terminates in various ways. Most commonly after the disease has arrived at its height, the sequel is as it were a retrogression of the symptoms; the skin becomes moist, the fever subsides, the hoarseness, and lastly the cough, gradually wear away. Sometimes relief is followed by coughing up a viscid white substance, after the disease has been of some days continuance. When the child dies after an illness of three or four days, there is found lining the windpipe a white substance resembling a membrane of considerable tenacity. It arises a little way below the larynx, and is sometimes extended into the ramifications of the bronchiæ, and generally a quantity of white fluid-like matter, with which the lungs are filled, is seen gurgling up. The attachment of the membrane is slight, but the mucous membrane which lines the windpipe is inflamed. The inflammation which is still perceptible, and which of course must have been more violent before this fluid exuded, appears to be the immediate cause of the violent symptoms during the first stage of the disease; and the adventitious membrane and puriform fluid are the consequence of that inflammation, in the second and concluding stage.

The membranous substance appears from experiments made with the usual tests to be the product of the coagulable lymph effused from the inflamed vessels on the surface of the trachea, which by confinement and the drying effects of the air in respiration becomes as firm as a thin membrane. In several cases which I have seen examined after death the membrane was attached to the trachea a little way below the glottis, was loose like an apron below, and was white and thin as writing paper and nearly as tough as parchment; a fluid resembling whey was observed under the membranous substance, interspersed with small particles resembling curd.

Dr. Ferriar says that he has seen this membranous substance in different stages of the disease as the inflammation had extended down the surface of the trachea, from a consistent substance at the upper part, capable of being pulled and torn, to the form of a purulent fluid recently effused; Dr. Ferriar adds, if any other proof of the nature of the disease was wanting, I have received it in another manner, by seeing the croup supervene as an accessory disease, in two cases of ulcerated sore throat. There had been little general fever, and there was no scarlet eruption in either case. Though there were large ulcerations in the tonsils, there was at the same time vivid inflammation of the fauces. There was nothing uncommon in the symptoms till the inflammation extended to the trachea, when faint shrill coughing, hissing respiration and restlessness came on, which were soon followed by death.

In a singular instance, says the judicious author last mentioned, I have seen pneumonic inflammation converted into croup. The inflammation had subsisted during ten days, in a boy almost seven years of age; the acute pain in the side was relieved; but the pulse continued very rapid, though not strong, there was a considerable degree of dyspnœa, and the cough was frequent, with a tolerably copious expectoration. On the morning of the tenth day he complained of pain in his throat, and in the afternoon the cough began to assume the crouping sound. Leeches were applied to the throat, which produced a free discharge of blood, with an evident mitigation of the cough and dyspnœa. An attempt was then made to excite vomiting, by emetic tartar; but though given in large doses it ran off by the bowels. Next morning the cough was nearly gone, expectoration had entirely ceased, the respiration was hissing and difficult, and the pulse began to flag. Under these circumstances it was thought necessary

to stimulate the stomach in the most powerful manner, a grain of *blue vitriol* was given in solution, and as it produced no effect seven grains more were successively exhibited in the course of the day. No vomiting followed, and suffocation took place.

TREATMENT.

I attended a greater number of patients with the cynanche trachealis or croup in the winter and spring of 1808, than for many years before or since that time, within the same period, and almost always found blood-letting a useful and in many cases a successful remedy, when employed very early and copiously, and repeated during the exacerbation of every paroxysm, as long as the dry ringing cough, croaking hoarse voice, difficult respiration and febrile symptoms continued, with but little or no abatement. A redness of the lips and flushing of the cheeks afford more certain evidence of the existence of fever in this disease, than the pulse. But in several cases, after the symptoms indicated that the preternatural substance resembling a thin membrane, so much taken notice of by the early writers on this disease, particularly by Dr. Home, had formed in the trachea, and which frequently takes place in a very short time, if the inflammation of which it is the consequence is not speedily subdued, the existence or formation of which extraneous substance is indicated by the return of the cough and symptoms of suffocation accompanied with a livid aspect of the countenance during the paroxysm of coughing after the febrile and distressing symptoms have subsided; blood-letting, instead of affording relief, has almost invariably increased the tendency to suffocation, and all the other alarming symptoms, and in some cases has unequivocally accelerated the fatal event, owing I presume to its debilitating effects, increasing the disposition of the larynx

to spasm from the irritation of the extraneous substance attached to, and confined in it.

It has been my constant practice for several years, soon after the first bleeding to prescribe an active emetic, most commonly a solution of tartarized antimony in water, and as soon as it has done operating, to apply leeches to the whole anterior part of the trachea, followed soon after the operation of the leeches by a blistering plaster, across the trachea, and over part of the thorax and fauces. And after the second bleeding, which I always found most beneficial when employed during the exacerbation of the paroxysm, I have generally made it a rule to repeat the blister to the trachea, and one to each wrist and ancle at the same time.*

As soon as the patient has rested sufficiently from the fatiguing operation of the emetic, I have for many years prescribed calomel to be taken in doses of from one to four or five grains according to the age of the patient, every hour, mixed in a spoon with some agreeable syrup or preserve, till all the violent and distressing symptoms were subdued, or till increasing debility and symptoms of suffocation, or convulsive motions gave the signal to desist.

* Drs. Ferriar and Cheyne speak favourably of immersion in the warm bath, after the operation of an emetic, and from a few cases in which I have seen it employed after the blood-vessels have been freely emptied, immediately after the operation of an emetic, I think it an excellent auxiliary in such circumstances; it determines the circulation to the surface, and thereby withdraws its force from the inflamed part, but from its usual effects in first increasing the fulness of the pulse it must be an equivocal remedy before the sanguiferous system has been copiously emptied by venesection.

As soon as the bath has had the effect of inducing perspiration, blistering the limbs have a most evidently beneficial effect in preventing the circulating fluids from being again morbidly determined to the inflamed trachea.

Calomel was employed as a remedy in this disease as well as in the malignant sore throat by several American physicians, and particularly by the late Dr. Thomas Bond, as early as the year 1772, to my knowledge, and was first tried in the cynanche maligna by Dr. Douglass of Boston, and by Governor Colden and Dr. Ogden of New-York, very early in the eighteenth century, but I do not know what physician first employed it in the croup, or by what circumstance or train of reasoning he was led to make trial of it.

As soon as the violence of the disease is evidently abated, the calomel is to be gradually discontinued, allowing at first two, then three, and finally four or five hours to intervene between each dose, according as the symptoms are more or less completely subdued. Calomel given in this manner commonly occasions both vomiting and purging, and the first alleviation of the symptoms is generally observed to follow a discharge of a large quantity of dark green coloured matter.

The doses of calomel should be regulated principally by the age of the little sufferer. When under one year of age it may be given from one to two grains every hour; from one to two years it may be given from two to three grains; during the third and fourth years it may be given from three to four grains, and during the fifth and sixth year from four to five grains, and so on. The calomel should always be mixed with some thick substance in a spoon when given, and never in any thin liquid.

I have frequently employed emetics after I had reason to conclude that the membranous substance was formed which constitutes and characterises the second stage of the disease, with an expectation of detaching and forcing it out of the trachea, but in no instance with success, but in some cases with manifest injury; whereas I have seen a few cases in

which the membrane has been brought up by coughing after mercury had been freely employed; being detached it is presumed by the mercury having increased the power of the absorbents.

It is in this stage of the disease, when the hoarse cough, croaking voice, irregular respiration, and sudden fits of apparent suffocation which come on after short intervals, are occasioned principally by the membranous substance formed in the trachea, and which dissections shew is firmly attached to it a little way below the glottis, that a strong decoction of radix seneka, so much extolled by several physicians of eminence in the middle states, and particularly by Dr. Archer of Maryland, as a remedy of superior efficacy in this disease, becomes a useful auxiliary to mercury, in consequence of the irritation it gives the fauces and the cough it excites, which when it is loosened or nearly detached by the action of the mercury, forces it up and rescues the patient from all danger of suffocation; but from its irritating quality and effect in exciting cough it is highly improper to administer it in the early or inflammatory period of the disease, as it increases the flow of blood to the inflamed trachea, and every thing that has that effect must necessarily aggravate the disease.

Dr. Smith of Loudon county in the state of Virginia, in a communication published in the fourth volume of the Philadelphia Medical Museum, relates that he had employed blood-letting in several cases of croup without success, and that in some it appeared to increase the dangerous symptoms and rendered the disease fatal; but from the success which I have frequently had with the lancet, when employed within the first twenty and especially when employed within the first twelve hours from its commencement, and so copiously as to induce sickness at stomach and symptoms of fainting or of

approaching convulsions, as well as from the testimony which has been adduced in its favour by several physicians of established character both in Europe and America, and particularly by Drs. Home, Cullen, Ferriar, and Cheyne, in Great-Britain, and by Dr. E. C. Dick, of Alexandria in Virginia, I am convinced that Dr. Smith did not employ the remedy early enough or was too sparing in the quantity of blood which he drew from his patients.

Dr. Home, the author of many valuable experiments with different articles of the materia medica in various diseases, ordered no less than five ounces of blood to be taken from a child fifteen months old, labouring under the cynanche trachealis.

The pulse still remaining hard, he ordered a repetition of the bleeding to the same quantity on the same day. On the following day he ordered the child to be bled largely by leeches, and these repeated evacuations were followed by the recovery of the child.

Dr. Ferriar of Manchester in the third volume of his Cases and Reflections attributes his success principally to his drawing blood on the first appearance of the symptoms which characterize the disease, and to his taking away at once as much as the patient could bear without fainting.

Dr. Cheyne, who has written still later on this disease, gives his testimony in favour of early and copious bleeding. And Dr. Dick in a letter addressed to Dr. Barton, professor of materia medica and natural history in the University of Pennsylvania, whose talents and ingenious researches entitle him to rank among the first scientific characters of the present age, published in the third supplement to the Philadel-

phia Medical and Physical Journal, assures him that he had succeeded in a very large majority of the cases of croup which had come under his direction, and the number that occurred in Alexandria was very great in the autumn of the year 1799, and the winter of 1800, by early and copious venesection, followed immediately after the operation by a dose of calomel. His patients were bled during the exacerbation of the first paroxysm while held or propped up in an erect posture, and the blood suffered to flow till signs of fainting began to come on, when they were immediately laid on a bed or mattress, and as soon as recovered from the debilitating effects of the bleeding the calomel was administered. He found the same treatment succeed equally well in the second paroxysm in cases that had remitted in the morning after the first paroxysm, in consequence of which remission the lancet had not been employed.

The cases in which blood-letting failed with Dr. Dick, were those where either the second paroxysm was suffered to progress during the night, or when the first paroxysm having undergone little or no remission in the morning, was permitted to proceed without interruption to the beginning of the second night.

Dr. Dick adds that in two or three instances only during the winter that the croup was so remarkably prevalent at Alexandria, a return of the disease some hours after its removal by bleeding, *ad deliquium*, obliged him to repeat the remedy to the same extent as at first, and that in those cases it was alike effectual in affording immediate relief; and he had in no instance occasion to resort to it a third time.

Dr. Kuhn informs me that in his practice he has frequently found the early application of leeches and blisters supercede the necessity of very copious bleedings by the lancet.

Bronchotomy has been proposed as a last resort in desperate cases of this disease by physicians of great eminence, and particularly by **Dr. Huxham**, (in his *Observations on the Air and Diseases of the Year 1739*, vol. II. p. 22), and by **Dr. Francis Home**, the writer who by his experimental inquiries first ascertained the inflammatory nature of this disease; before which it was either treated empirically or erroneously and destructively, from a supposition that it was a spasmodic affection of the glottis. But **Drs. Crawford, Ferriar and Cheyne**, disapprove of the operation, from an apprehension that during the attempt to extract the preternatural extraneous substance, the artificial passage made for the air as well as the passage by the glottis should be obstructed and the patient suffocated.

In situations where leeches cannot be procured, the skin over the upper part of the trachea may be taken up between the thumb and finger of one hand, and several small incisions made into it with a lancet or scalpel, after which cupping glasses from which the air has been expelled, or rarified by burning pieces of paper dipped in rectified spirits of wine or proof brandy in them, or by holding them over the flame of a lamp, should be applied to the incisions. But if neither cupping glasses nor leeches can be procured, the glasses used for drawing milk out of women's breasts, which have a bowl of a cylindrical shape, and a long curved handle, may be employed as a substitute for cupping glasses. By applying the bowl of this to the orifices a sufficient quantity of blood may be drawn by a person sucking the end of the tube.

If the little sufferers could be prevailed on to let cupping glasses be applied to the orifices first made by leeches, the blood drawn by those means would in the less violent cases supercede the necessity of such copious bleeding from

the arm as has been so earnestly recommended. The difficulty of bleeding a restless child in this disease from the jugular veins, has deterred me from recommending the opening of them.

The regimen in this disease during the existence of the local inflammation, should be the same as that recommended by the most experienced writers in other inflammatory affections of a highly dangerous tendency.

OF THE
PERIPNEUMONY,
OR
INFLAMMATION OF THE LUNGS.

PERIPNEUMONY or inflammation of the lungs is denoted by acute fever, with the face of a livid colour, and somewhat swelled, difficult respiration, obtuse pain in the anterior and superior portion of the thorax, a cough usually moist and frequently bloody. It begins with the common symptoms of fever, though the pulse may be perhaps but little quickened or the heat of the body much increased, and there prevails more a sense of weight than pain in the seat of the affection. The breathing is most impeded in inspiration, and when lying on either side. The cough is at first attended with thin gluey expectoration, but becomes, in the progress

of the disease, more thick and copious ; a matter of various consistence and colour being coughed up generally at first, streaked with blood. The pulse is for the most part soft, which especially distinguishes it from pleurisy, and in the advanced stage it becomes weak and often irregular.

Those of a tense fibre and sanguine constitution are most liable to the attacks of this disease, which are most frequent at the middle period of life ; for neither youth nor old age are its most common subjects. It prevails chiefly in winter and spring, and one attack favours a repetition of the malady.

Its causes may be referred to cold operating upon the vessels of the bronchiæ and lungs.

This disease sometimes obtains a favourable termination by a spontaneous hæmorrhage from the nose ; the expectoration of thick yellow coloured mucus brought up without much difficulty, a critical sweat, the deposition of a brick coloured sediment in the urine, and sometimes, which is more rare, the appearance of an erysipelas on some external part ; from which period the symptoms remit.

Our prediction of the event is to be governed by the state of the symptoms, as the degree of fever, which, when attended with delirium, is always highly dangerous ; the difficulty or ease of respiration, which denotes hazard when it can be performed only when in an erect posture, and the greater or less violence of the cough, which is most favourable when moist, and the phlegm easily expectorated ; yet this disease is often highly deceitful in its symptoms, and with a form apparently mild and little alarming, it proceeds rapidly to a fatal and unlooked-for issue ; particularly in low, wet situations, and open rainy winters. Hence the slightest appearance of it should always be considered as important.

Like most other inflammations this disease either terminates by resolution, effusion, suppuration or gangrene. When it terminates by resolution it generally takes place in the first week of the disease, especially if moderate in its symptoms, though it is liable from the third to the seventh day to a deceitful remission, which is followed by an exacerbation. This resolution is marked by one or other of the discharges already mentioned.

Suppuration is always to be suspected if the fever and pain are protracted beyond the fourteenth day. The existence of this is denoted by slight chills or rigours with a fullness of the pulse and an increased quickness every evening. Or lastly, which is peculiar to this disease, (and when it occurs is always fatal), by an effusion into the cellular membrane of the lungs, producing suffocation, which happens generally from the third to the seventh day; this effusion may sometimes be connected with gangrene. The disease has been mentioned, at times, as liable to a metastasis to the head or abdominal viscera; but these are rare terminations.

TREATMENT.

In the treatment of this disease more than of any other inflammation, excepting that of the brain, stomach, heart or diaphragm, an early application of the antiphlogistic plan in its most rigorous extent, should be made; and that, though the apparent mildness of the symptoms, should appear to render such severe treatment unnecessary.

Bleeding should be had recourse to as early as possible in the complaint, and the blood permitted to flow, till sensible relief of the pain and oppression in the thorax is obtained, or to the extent of inducing syncope or fainting, and repeated on the same day in an equal quantity, without

regard to the state of the pulse if the respiration and pain are not greatly relieved.*

After general bleeding, topical bleeding by means of cupping or leeches with the same view, if indicated by the continuance or return of dyspnœa and pain; and blisters may be safely and advantageously applied to the thorax and legs immediately after the second bleeding and the operation of an active cathartic.

Sydenham and most practical writers before the publication of Dr. Cullen's first lines, prohibited the use of the lancet after the patient began to expectorate thick and coloured mucus, and others limit it to the first five days of the disease; regulations which ought by no means to be adopted, the only safe rule for discontinuing blood-letting being relief from pain and difficulty of breathing.

The remainder of the treatment in common cases of peripneumony corresponds in every respect with that recommended in the pleurisy, which follows.†

* So long as any pungent or shooting pains remain there is an infallible indication for bleeding.

Dr. Dover asserts that his next door neighbour "had a servant seized with pleurisy, who lost two hundred and sixty ounces of blood before his pain left him," and that he afterwards enjoyed perfect health.—Physicians Legacy, edit. 8th, p. 33.

In the year 1801 Mr. Hughes, a cabinet maker, about forty years of age, lost two hundred and eight ounces by my direction in six days, before the pain and oppression of his thorax were removed, after which he recovered very rapidly.

† Dr. Kuhn, one of the best informed and most judicious physicians that America ever gave birth to, informs me that he has met with a state of pneumonia extremely distressing and highly dangerous; in which after the inflammatory symptoms had been subdued, considerable oppression remained, with inability to expectorate; and that under these circumstances he had found the volatile alkali a powerful expectorant.

OF THE PLEURISY,

OR

INFLAMMATION OF THE PLEURA, OR MEM-
BRANE SURROUNDING THE LUNGS.

THIS disease, like the other genera of the second order, begins with a cold stage, but differs from the peripneumony in the seat and acuteness of the pain, and in the hardness and frequency of the pulse; its pathognomonic or characteristic symptoms being acute and pungent pain in one side of the thorax, most frequently the right, augmented chiefly during the time of inspiration, *with an increase of pain when lying on the affected side in the early part of the complaint*, but the reverse at a late period if suppuration has taken place. A most painful cough, dry in the beginning of the disease, afterwards an expectoration of phlegm, most commonly of a light brown colour, and tinged with blood. The pulse being at the same time tense or hard, quick and strong.

The cough and stitch always precede the fever, and not the fever the local inflammation, which from the fever ceasing with the cessation of the pain proves it to be merely symptomatic.

The inflammation of the pleura frequently extends to the diaphragm which is distinguished by the respiration being performed only by elevating the ribs and in an erect posture.

In Philadelphia when the disease terminates fatally, it is generally between the seventh and fourteenth day, most frequently on the eleventh. On the low grounds in the southern states it generally finishes its course at an earlier period.

When it terminates favourably it is generally on the fifth, seventh, eighth or ninth day, for it does not seem to pay much respect to Hippocrates's critical days; but it sometimes terminates favourably after the eleventh day.

When the pain in the side and fever continue without any considerable abatement longer than seven days, it affords reason to suspect that it will terminate in suppuration. And if those symptoms continue till the fourteenth day an abscess may certainly be expected.

The signs which indicate that an effusion is made which may lay the foundation of an abscess in this disease as well as in the peripneumony, are, the difficulty of breathing becoming greater and the cough more dry and frequent, when the patient lies in an horizontal posture, or when he can lie most easily on the affected side, while the feverish symptoms which had subsided, return, and are increased every afternoon. While the abscess is forming, the patient is frequently affected with cold sensations or rigours succeeded by flushes of heat, and burning in his hands and feet, resembling the symptoms of the hectic, or symptomatic fever of phthisis pulmonalis.

With the formation of pus the pain gradually ceases, though the cough and difficulty of breathing continue; and, upon any extraordinary exertion, are increased and aggravated.

The feverish symptoms, after the formation of an abscess, have exacerbations every evening, and remissions every morning; the remissions being accompanied, in many cases, with a profuse diaphoresis.

TREATMENT.

The treatment of this disease must proceed upon the same principles and rules as those, already laid down, in the treatment of peripneumony.

When in either of these varieties of pneumonic inflammation, the pain and difficulty of breathing are reduced by the means already directed in peripneumony; besides the application of a large blister to the part affected and to the ancles, it will be of service to give one of the following powders, dissolved in lemonade or any agreeable cooling liquid, every two hours.

℞. Pulv. antimon. tartarisat. grs. iij.

Pulv. nitri. ʒiij. vel ʒss.

Pulv. gum arabic. sach. alb. ānā ʒj. m. f. ch. no. viij.

To gratify the patient, while he sits up in bed in order to refresh himself, and prevent ill effects from the stimulus of the heat retained in the bed, he may have his face and hands frequently washed with vinegar and water of tepid warmth.

The chamber should also be constantly preserved of a temperature agreeable to the feelings of the patient, and the drinks should be of an acidulous refrigerating quality; such as lemonade, tamarind water, apple water, quince tea, currant jelly and water, barberry jelly and barley water, linseed tea, balsa water, toast and water, &c. &c.

The diet should consist entirely of a decoction of barley and raisins in water, to which may be added, on account of the cough, gum arabic and sugar; oatmeal gruel, panada made without the addition of wine or spices, buttermilk and water, rennet whey, the juices of oranges, &c. &c.

Medicines, usually called expectorants, consisting of oily mixtures, spermaceti, and syrups, were formerly much employed in these diseases, with an expectation of relieving the cough; but later and more accurate observers have generally discarded them as inefficacious and useless, if not injurious.

The only expectorants to be depended upon in inflammatory affections of the lungs, or their surrounding membrane, are those which reduce immoderate action and the general vigour of the system.

When the inflammation terminates by an effusion into the cellular membrane of the lungs, all attempts to relieve, that I have hitherto seen attempted, have been of no avail.

Dr. Darwin, on the subject of pneumonic inflammation, vol. i. p. 249, Philadelphia edition, mentions that when the patient becomes delirious, and smiles disagreeably at intervals,

and is become so weak that evacuations by the lancet could be no longer made with safety, and he has almost despaired of his patient, he has found in two or three instances, that about five or six drops of the tinct. opii. given an hour before the evening exacerbation, has had the happiest effect and cured his patient. When catarrhal symptoms continue after the removal of the inflammation, I have often experienced beneficial effects from small doses of opium.

When the inflammation terminates in suppuration, and the pus is diffused between the pleura and ribs, it is called an empiema, and can only be relieved by a surgical operation; the manner of performing which, is circumstantially described in the second volume of Bell's Surgery, as well as in several other modern surgical works.

When the abscess forms and breaks in the substance of the lungs, so that the pus is discharged into the bronchiæ, the patient frequently recovers by observing a spare diet, and promoting the discharge of pus, by the frequent use of mild emetics and nauseating doses of antimonials, syrup of squills, or a decoction of seneka root and liquorice root.

In general the same mode of treatment, recommended in the phthisis pulmonalis, will be proper in these cases. For a more particular direction the reader may, therefore, consult the directions, which he will find given for the purpose of relieving that disease, when it has arrived at its second stage.

The seneka in decoction, is highly recommended for the peripneumony and pleurisy, which frequently occur in a violent and dangerous form, known by the name of the suffocation of the lungs, in the southern states, in open winters and in low wet situations.

This disease bears a strong resemblance to the pneumonia notha of Dr. Cullen, which is next to be described; for which, I suppose, the same treatment, which has succeeded in the latter, would be equally proper in the former.

Such is the state of the system in the generality of those who reside in marshy situations in the southern states, especially if they have suffered much from intermittent or bilious fevers during the autumnal months; or, have lived long in habits of intemperance, that when attacked with pleurisy, they seldom recover from it. In such constitutions, the symptoms of two diseases of an opposite nature appear to unite with one another. The pain and fever becoming always highest in the afternoon, with a diminution of expectoration, and remitting in the morning and forenoon, accompanied with an increase and copious expectoration of thin gleety, often bloody mucus. The pulse during the exacerbations of fever is often more frequent, but never so strong, full or hard, as in the true pleurisy of higher latitudes, and drier situations. And the local inflammation is observed to disappear, or to terminate in effusion and suffocation, much sooner than in persons of more vigorous constitutions and phlogistic diathesis; and, in many cases, after the disappearance of all the inflammatory symptoms, particularly in intemperate livers, the fever still continues in the form of typhus mitior, or a slow nervous fever, and in other descriptions in the form of an intermittent, accompanied with bilious evacuations.

As this disease requires precisely the same remedies, and method of treatment as the pneumonia notha, the reader is referred to that disease, for what should follow here.

OF THE
PNEUMONIA NOTHA,
OR
SPURIOUS INFLAMMATION OF THE LUNGS.

THIS appears to be a species of peripneumony diversified in symptoms by constitution and season; being most prevalent in marshy districts and in open wet winters.

It commonly begins with symptoms resembling a very severe catarrh, but with more pain and oppression in the anterior part of the thorax, and much greater difficulty of breathing; and in marshy situations and southern climates is accompanied with remarkable debility of the vital and animal powers.

The cough is among the first symptoms, accompanied with a very copious expectoration of viscid mucus of various colours, frequently mixed with blood.

A catarrh is strictly an affection of the mucous membrane and follicles of the bronchiæ alone; but it may readily have and frequently has a degree of pneumonic inflammation joined to it, which is the precise state of the pneumonia which occurs early in the winter in the marshy situations of the southern

states. In such a state of the affected parts an effusion of serum into the cellular texture of the lungs may readily take place and occasion a fatal suffocation. The subjects of this disease are generally old or infirm persons, or those who have been debilitated by previous disease, and particularly by the inter-mittent fever, as I have had frequent opportunities of observing. The occasional causes of this disease are the same as those which produce pleurisy, but the predisposing ones, and especially the diathesis, present at the time of exposure to the occasional causes is very different. Hence the difference in the symptoms.

TREATMENT.

When the fever, catarrhal and pneumonic symptoms are considerable, early blood-letting proportioned to the age, strength and constitution of the patient, has generally afforded immediate relief; but if symptoms of general debility are prevalent, which is often the case, it will seldom be requisite to repeat it, and when an effusion appears to have taken place a repetition of blood-letting might prove injurious. In all cases the remedies chiefly to be depended on are local bleedings by means of cupping glasses or leeches, emetics, mercurial purges and blisters. An active emetic, or a mercurial purge should be given soon after bleeding, and when they have done operating, a decoction of seneka and the oxymel of squills should be taken as directed in the latter stage of pleurisy, or rather small nauseating doses of ipecacuanha; large blisters should be applied at the same time to the thorax, wrists and legs. If the debility increases, the oppression continues, and the expectoration is diminished, sal. alk. vol. made into boluses, with conserve of roses or sugar and powdered gum arabic, or into a julep with the addition of water, each dose containing five or six grains of sal. alk. vol.

should also be frequently administered, and blisters applied to the thorax and wrists, and strong sinapisms to the feet, renewing them occasionally as their effects go off.

When combined with bilious remittent fever, which is a frequent occurrence in the latter end of autumn and beginning of winter in the southern states, as soon as the inflammatory symptoms have been reduced by the means recommended; decoctions of bark and serpentaria will be advisable during the apyrexia, with wine whey and mild nourishment of easy digestion.

OF GASTRITIS,

OR

INFLAMMATION OF THE STOMACH.

THIS disease is distinguished by acute fixed pain and burning sensation in the stomach, aggravated by every thing taken into it, and by motion and pressure.

The pulse after the cessation of the rigors with which it commences is hard, contracted, small and frequent, and is accompanied with great anxiety, oppression, and greater diminution of strength than in any other inflammatory affection.

Every thing taken into the stomach occasions vomiting, with painful straining. Hiccup is also generally an early symptom. The features and muscles of the face are contracted and shrunk, and soon appear to be remarkably altered.

This disease is divided by systematic writers into two species, phlegmonous and erysipelatous. But as the latter, generally speaking, is only the sequel of other diseases, and appearing towards their termination when fatal, I shall confine my observations to the former.

The most usual causes of this disease are, large draughts of cold drinks, such as a large draught of cold water, iced punch or iced creams, taken when the patient is in a profuse perspiration, at a time when the body is rapidly parting with its heat.

It is also sometimes occasioned by contusion or distension from swallowing hard and indigestible substances and by poisons or corrosive substances, &c.

Its termination, like the diseases of this order, is by *resolution*, suppuration or gangrene, and in some instances by schirrus.

Our prognostic of the event must in general be unfavourable. If the pain, vomiting and fever are not manifestly relieved in the course of four days, we may expect suppuration or gangrene to take place.

The former is distinguished by frequent, transient rigors, and flushings of heat, with a remission of the acute pain, succeeded by a sense of weight and distension.

In this case the pus is sometimes discharged by vomiting or diarrhœa, and the ulcer heals. This however is not often the case.

Gangrene is distinguished by the sudden cessation of pain and fever, cadaverous coldness of the extremities, livid colour and fullness of the face, and by a vomiting or purging of dark or black coloured matter, mixed with small flaky substances, resembling coffee-grounds, &c.*

When the inflammation terminates in schirrus, the patient is subjected to a painful and lingering hectic, which after some time carries him off.

TREATMENT.

As this disease frequently terminates fatally, in the course of three or four days, the remedies should be employed as early in the disease as possible. The most effectual remedies, are copious and repeated bleeding without regard to the state of the pulse; provided, the pain is acute, as the pulse almost invariably rises and becomes fuller after the first or second operation.

As purgatives cannot be taken into the stomach with safety, mild laxative clysters should be injected every three or four hours, as long as the violence of the pain and hardness of the pulse continue.

* For the appearances of the stomach after death, consult Dr. Stark's Clinical and Anatomical Observations.

Small draughts of cool acidulated water, should also be taken into the mouth almost constantly, and swallowed leisurely; and, after the second bleeding, which should be as large as the patient can bear without swooning, followed by cupping, or the application of leeches to the stomach; an epispastic, large enough to cover the stomach and half the abdomen, with two at the same time to the legs should be applied, and afterwards dressed with simple cerate. If the stomach refuses every kind of drink, the patient must content himself with holding lemon or orange juice and water, or tamarinds in his mouth without swallowing them, and persevere in the use of laxative clysters and the use of the lancet, till the stomach will bear barley water, or a decoction of toasted oats and gum arabic, thin sago, or arrow root, &c.

If the disease terminates in suppuration, a spare cooling diet, and demulcent drinks with an occasional clyster, or a mixture of oleum ricini, and a mucilage of gum arabic, should sometimes be given to favour the discharge of the pus. Emetics would be unsafe. When it terminates in gangrene all attempts to arrest the progress of death are unavailing.

OF ENTERITIS;

OR

INFLAMMATION OF THE INTESTINES.

THE existence of this inflammation may be known by a constant and fixed pain in the abdomen, particularly about the umbilicus, attended with fever, a hard and frequent, though generally small pulse, costiveness,* and frequent vomiting, or efforts to vomit.

One of the most certain signs of the disease being an inflammation of the intestines is, that the pain is greatly increased upon taking any thing warm into the stomach, whereas, hot and stimulating substances, generally afford ease in cases of colic. The tongue is also white and dry in enteritis, and the countenance betrays great inward distress and anxiety, and the thirst is excessive.

Gangrene, which is the most frequent termination of enteritis, often supervenes in the course of three or four days. The chief symptoms of gangrene are, a sudden cessation of pain, sinking of the pulse, shrinking of the features, distension of the belly, deadly coldness of the limbs, and cold, clammy sweats.

* When the enteritis is of the erythematous kind, it is accompanied with a painful diarrhœa and little or no vomiting.—*Cullen's Nosology.*

The causes of enteritis are much the same as those of the other genera and species of phlegmasia.

Our judgment or prediction of the event of this disease must always be uncertain. Unless the symptoms are evidently alleviated in three or four days at farthest it generally proves fatal. Our judgment of the event is therefore chiefly to be directed by the violence and fixed state of the pain, for if remitting and shifting in its situation it is then to be considered as somewhat favourable, and particularly if the symptoms of fever become at the same time milder. The occurrence of strangury, when not the consequence of blisters is very generally a dangerous symptom. Dissections in this disease shew mortification of the intestines often to a considerable extent. Their outer surface covered with red vessels, their inner surface when cut into gangrenous. The peritoneum is also more or less affected and covered at times with a layer of coagulable lymph. The intestine is often of a dark colour and gangrenous appearance and texture, losing entirely its natural cohesion. Ulcerations are found in the farther progress of the disease in different parts of the intestines, which assume various appearances. Adhesions likewise of the diseased portion are formed with the contiguous parts. Obstructions are found frequently in the cavity of the intestines, which are greatly distended with air and fæces about the obstructed part, as also sometimes intussusception or inversion of one part of the intestine into another, constrictions, contortions, &c. &c.

In that form or species of the disease called the iliac passion, it is always occasioned either by the inversion of a portion of intestine, or the strangulation of a portion of intestine in its passage through the abdominal ring into the scrotum, or other aperture leading from the abdomen. In which case

the patient is always affected with excruciating pain and vomiting, and is invincibly costive, till the complaint is removed by reducing the incarcerated portion of the intestine to its natural situation.

TREATMENT.

No disease requires a more strict employment of the antiphlogistic regimen than the enteritis, and there is no one in which an inexperienced practitioner is more apt to be deceived with respect to the expediency of employing this regimen. In the beginning the pulse is hard and frequent, but low and small, the feet are generally cold and the patient complains of cold sensations upon every change of posture; hence the inflammation is not always suspected, but the pain is ascribed to flatus or indigestion.

The pathognomonic symptoms, or those which distinguish the disease from every other of the same order, are a fixed and constant pain in the abdomen, particularly about the umbilicus, accompanied with fever, costiveness, sickness and vomiting.

In the sickness, hardness and irregularity of the pulse, it agrees with gastritis.

In the cure of this disease, large and repeated bleedings from the arm and by the application of leeches or cups to the abdomen, are the most effectual remedies. There are some instances on record where two hundred ounces of blood have been drawn in the space of five days before the inflammation was subdued.*

* See Vanswieten's Commentaries.

Certain kinds of purgatives have also been supposed highly beneficial. Of these **Dr. Heberden** and **Sir John Pringle** have given the preference to epsom salts (*magnes vitriolata*) and direct them to be taken in the following manner: two ounces of the bitter purging salt (*sulphate of magnesia*) commonly called epsom salt, is to be dissolved in one pint of boiling water, and two table spoonfulls to be taken every half hour, or one table spoonfull at shorter intervals, as long as the patient's stomach will bear it, or till it occasions his bowels to be freely evacuated; after which it is to be repeated at longer intervals, till the inflammatory symptoms give way. Notwithstanding the unpalatableness of this medicine, the stomach will frequently retain it when it rejects medicines and drinks that are more palatable.

Mild mucilaginous and oily clysters, administered rather cool than warm, and in small quantity at a time, and frequently repeated will greatly facilitate the operation of the purgatives.

In this dangerous disease a large blister should always be applied over the abdomen as soon as the hardness and tension of the pulse has been reduced by general and local blood-letting. When this begins to heal, and the disease still exists, the same remedies should be repeated with the addition of blisters to the inside of the thighs or legs.

The same drinks and regimen should be employed as directed for the gastritis.

Mercurial cathartics are recommended by **Dr. A. P. Wilson**, a late writer on this disease, as well as by **Dr. Pemberton**; but from their stimulating operation, I should think them hazardous remedies. The *oleum ricini* is much milder and frequently very efficacious in evacuating the intestines.

Notwithstanding the high estimation in which Drs. Heberden and Pringle are deservedly held, I am of opinion that they have been deceived with respect to the effects of saline purgatives in this disease; as the stimulating action of every kind of purgative must necessarily increase the inflammation after it is once formed; but as the retained fæces aggravate the inflammation more perhaps than the stimulus of some purgatives, this circumstance ought to be always attended to and the fæces discharged by mild oily laxatives, or by mild injections.

OF THE HEPATITIS,

OR

INFLAMMATION OF THE LIVER.

THE diagnostic symptoms of the acute hepatitis, are, a pain more or less acute in the right hypochondrium, increased by pressing on the part; considerable pyrexia, with a frequent, strong and hard pulse.

It is chiefly distinguished from pleurisy by there being less cough and less dyspnœa, and particularly by the patient being able to lie with most ease on the affected side, which is the reverse in the first stage of pleurisy. The pain in this disease is often extended to the clavicle and to the top of the

shoulder, and is attended sometimes with hiccup, and sometimes with vomiting.

When the concave part of the liver is inflamed there is a heavy fixed pain in the right hypochondrium, with inflation, tension and hiccup. When the convex part is inflamed there is an evident and painful enlargement of the side, with acute pain in breathing, extending up to the neck or top of the right shoulder, accompanied with a dry cough.

“When the convex part of the liver is affected, the patient sometimes can only lie upon the left side.”

“The disease of the liver has a great tendency to suppuration. When suppuration occurs and the abscess points outwards, and the matter is discharged by incision, the patient has some chance of recovery; but when it bursts within the cavity of the abdomen or into that of the thorax, the case almost always proves fatal. Sometimes, however, such dangerous cases terminate favourably.”—(See Clark’s *Diseases of long Voyages*, vol. II. p. 404.)

It is often difficult to distinguish this disease from an inflammation within the thorax. In most cases, however, it may be distinguished by the circumstances of the cough having succeeded and not preceded or been coeval with the pain and fever, and from the pain being increased by gentle pressure under the margin of the ribs of the right side, and from the patient being able to lie with most ease on the affected side in hepatitis, whereas in pleurisy or inflammation of the thoracic viscera, he lies with most ease on the side that is least affected. This is an important fact which should always be retained in memory.

TREATMENT.

This disease requires precisely the same remedies as the pleurisy, with the addition of topical blood-letting by means of cupping glasses or leeches.

Physicians who have practised in the East-Indies, where the disease is said to be very common, speak highly in favour of the use of mercury in it when the pain continues after the mitigation of the inflammatory symptoms.

Mr. Benjamin Bell in his system of surgery advises the adoption of a similar mode of treatment.

Drs. Clark and Hamilton in Great-Britain affirm that mercury rubbed into the side and taken internally in such quantities as to occasion tender gums, scarcely ever fails of removing the complaint. This remedy has not been so successful in Philadelphia, and when it is of service in the acute form of the disease, it appears to be so only when it operates as a purgative, and not when it operates by inducing salivation; but in protracted or chronic cases a salivation is the remedy which has succeeded more certainly than any other.

Dr. Clark says, when cases resist the common antiphlogistic mode of treatment, mercury should be prescribed from the fourth or fifth day of the disease (the phlogistic diathesis being by that time generally reduced.) His prescription is two grains of calomel made into a bolus with conserv. rosar. twice a day, with an opiate in the night-dose to prevent its running off by stool: as soon as the mouth became affected the medicine was omitted, and although a salivation was not excited, yet in all the cases the cure was completed in a fort-

night or three weeks. During this course if the respiration became difficult or the pain in the side more violent, it was necessary to bleed and to apply a blister to the part affected. —Clark on Diseases of Hot Climates, vol. II. p. 410, edit. 2.

Dr. Clark adds that he has found mercury so successful in subduing a multitude of diseases of very different and opposite natures, that he cannot impute its efficacy to one quality only. Perhaps its chief excellency depends upon its inducing and supporting a condition or state of the system opposite to that of the existing disease. Dr. Girdlestone says, “mercury always succeeded best in the East Indies when applied externally from ʒss. to ʒj. twice a day.” But in the cases which have occurred in my practice in Philadelphia, I have always thought the mercury produced the most certain effect when it operated by stool, provided its evacuating effects were not so profuse as to exhaust the patients strength too much.

The natural tendency of inflammation of the liver is to suppurate, and when the inflammation is on the convex or external surface of the liver the abscess frequently finds vent externally in consequence of the adhesion produced by the inflammation between the liver and the peritoneum.

In such cases the abscess should be opened with a lancet as soon as the softness of the tumour or fluctuation of matter is evident.

The quantity of pus which sometimes issues from those abscesses is almost incredible. When suppuration occurs in the concave portion of the liver the pus sometimes by a similar adhesion of parts in consequence of the inflammation, finds its way into the intestines and is gradually evacuated.

But when the pus finds no vent or an insufficient one a hectic ensues, which sooner or later puts a period to the patient's life.

Dr. C. R. Pemberton, in his "Practical Treatise on various Diseases of the Abdominal Viscera," objects to the use of mercury in the acute form of hepatitis, except when given in a large dose as a purgative, because of its tendency to increase the general phlogistic diathesis and increase the force of the circulation before it produces pyalism. The external application of the blue ointment is liable to the same objection.

Dr. Pemberton places his chief dependence upon the sudden and repeated abstraction of a large quantity of blood from the arm and from the affected part by means of cups or leeches, and one free purging daily by means of a solution of epsom salts in a strong infusion of senna. This may be rendered palatable by the addition of chrystals of tartar, tamarinds or lime-juice and sugar, and after it has operated very copiously it may be given in reduced doses once in four or six hours, so as to keep up a frequent evacuation, purging in this disease being particularly useful, as by increasing the secretions of the intestines it withdraws the determination of the blood from the vena portarum, and thereby prevents it from distending the inflamed viscus.

When, after the judicious application of the recited remedies, the pain still continues though more obtuse, a large epispastic should be applied over the hepatic region, and occasionally renewed as it shows a tendency to heal. Under these circumstances, nauseating doses of emetics are also advisable, similar to those directed in the treatment of pleurisy.

“The chronic form of this disease, in the greatest number of cases, is the consequence of a long continued course of intemperance in ardent spirits, though it is also sometimes the consequence of repeated attacks of the intermittent fever, and other debilitating powers gradually applied.

“This form of hepatitis is discovered by a sense of weight and dull pain in the right side, and a weight and weariness in the right arm; pain also frequently occurs on the top of the shoulder. The tongue is usually whitish, the appetite impaired, and the countenance sallow. The pulse is about ninety, and almost invariably intermitting.

“We may account for this intermission, from the blood in the hepatic artery, not finding a ready passage through the hardened viscus; it is, therefore, thrown back upon the heart, and thus interrupts the regular action of that organ. There is also very commonly, a sensation of fluttering at the pit of the stomach, which may arise from the blood of the vena portarum, being in like manner unable to find a free passage. It is, therefore, retained in that vein, and causes a sensation of undulation.

“From the want of a free passage of the venous blood, arise the hæmorrhages which often take place from the stomach, intestines, and nose. Pimples are also observed, frequently to make their appearance upon the nose, cheeks and forehead. The body in this disease becomes much emaciated; and in the advanced stage, a dropsy of the abdomen takes place, by which the patient is destroyed.”

TREATMENT.

In the cure of the chronic form of this disease, the generality of physicians give the preference to mercury, which is either given in small and repeated doses internally, or applied in the form of ointment to the region of the liver externally till a salivation is excited, having previously cleared the *primæ viæ* with an active cathartic.

“As dyspeptic symptoms generally accompany the disease, it is generally necessary to give the patient some gentle tonic, during the use of mercury, and when calomel is employed, a small quantity of opium should be joined to every dose.”

For a more detailed account of the treatment of this form of the disease, the reader may consult Clark on the diseases of long voyages, and those writers that have practised in the East Indies, where the chronic inflammation of the liver is a very common disease.

The regimen should be directly the reverse of that which favoured the generation of the disease; and, after the induction has been removed, the patients strength may be restored by a nutritious regimen of easy digestion, the moderate use of chalybeate waters impregnated with carbonic acid gas, moderate and repeated exercise, &c. &c.

OF THE RHEUMATISM.

THIS disease is most prevalent in the middle states, during the latter portion of the spring and the early part of the autumnal season, owing to the greater and more frequent vicissitudes of temperature at those times.

It most frequently attacks persons who change their winter clothing too early in the former season, and their summer clothing too late in the latter.

It also frequently occurs in the winter season, particularly among the inhabitants of the western and mountainous parts of the country, owing to deficiency of warm cloathing; and especially among those who, after the fatigues of the day, are not sufficiently protected during the night from the impression of the severe cold, which frequently prevails at that inclement season.

“ Shuddering in the hut of cheerless poverty,
Sore pierc'd by wintry winds
And Rheum's joint-racking pains.”

This disease is accurately described by Dr. Cullen, in the second volume of the edition of his *First Lines of the Practice of Physic*, published by Dr. Rotheram with notes in the year 1791, and the treatment which he recommends in the acute or inflammatory stage of the disease, has been so frequently confirmed by my own experience, as Dr Fowler's has,

in the chronic stage of the disease, especially when accompanied in the latter case with the use of mercury either internally or externally till its effects were visible in the mouth, cold water being applied at the same time by affusion to the parts (if seated in the limbs) most affected with pain and weakness, followed by friction and the application of warm flannel.

Having therefore no new improvement in the treatment of this disease to offer, I shall content myself with referring the reader for more ample information to the publications of those very excellent and experienced authors, and shall only add that the favourable reports of some of the British physicians, with respect to the beneficial effects of Dr. Fowler's solution of arsenic in cases of chronic rheumatism, has lately been confirmed by the experience of Dr. Parke at the Pennsylvania Hospital, the particulars of which were lately communicated by him in writing to the College of Physicians.

OF THE GOUT,

THE best description of this offspring of indolence and gluttony that I have met with is contained in Dr. Cullen's First Lines of the Practice of Physic, vol. 4th; to which to save the trouble of transcribing, the reader is referred. Several authors have written professedly on this subject, particularly Mr. Warner

and Dr. Gardiner, I shall therefore only observe in this place that it is distinguished from the rheumatism by being preceded by symptoms of indigestion, and the pains being seated in the smaller joints, and that as it depends on causes which operate on all the moving powers of the body, it can never be radically cured by medicines alone, whose effects are always transitory and often inefficacious, while the remote causes continue to be applied.

It must therefore be obvious that however useful palliatives may be during the paroxysm, temperance and a due degree of exercise must be the principal means of preventing its recurrence.

In the case of Dr. Darwin, a course of temperance, exercise and regularity, entirely removed the disease. For particulars, the second volume of his *Zoonomia* may be consulted.

The cure of the gout has been attempted of late years, by means of depleting remedies and the application of cold water to the affected parts, during the exacerbation of the painful and feverish symptoms, by several enterprising physicians in different parts of Great Britain, and particularly by a very zealous practitioner by the name of Kinglake.

To render this treatment safe as well as effectual, Mr. B. Mantal of Bromley, advises strict attention to the following rules.

“ 1st, Never to begin with the cold applications till the internal viscera have discovered indubitable signs of performing their proper functions with accustomed energy, which will rarely be the case till the local inflammation has existed for

some hours, and often for two or three days, and in some cases even a longer period.

2d, When these signs are discovered, and leave no doubt of the existence and establishment of inflammatory action accompanied with general vigour in the circulating system, the application of cold water to the affected part is perfectly safe. In such circumstances, pieces of folded linen dipped in cold water should be applied and frequently repeated, or kept constantly wet with cold water till the local inflammation is subdued.

3d, If in consequence of the too long continued application of the cold water, symptoms of constitutional disturbance, such as cramp of the stomach or comatose symptoms should come on, stimulating applications, such as sinapisms with external warmth, should be immediately applied to the limbs, and opium and camphor, or camphorated tincture of opium, and volatile tincture of guaiacum in sufficiently large and repeated doses should be administered in any appropriate warm liquor. After which, if the topical inflammation becomes again established, the cold topical applications may again be employed, only of somewhat higher temperature than at first. By this treatment judiciously conducted, a happy and speedy termination may be generally expected in cases of acute and regular gout. But in the chronic state, or atonic form of the disease, in which the different functions are disturbed or imperfectly performed, and especially in exhausted constitutions, such treatment is not only hazardous but totally inadmissible."

OF THE
ERYSIPELAS,
 OR
ST. ANTHONY'S FIRE.

THIS disease is placed by Dr. Cullen in class first, order third and genus twenty-sixth, and is a species of the erythema, which differs from the phlegmon in the following circumstances, viz. in the latter, the inflammation particularly affects the vessels on the internal surface of the skin, communicating with the lax adjacent cellular texture, whence a more copious effusion of serum convertible into pus, takes place. In the former, the affection is of the vessels on the external surface, communicating with the rete mucosum, which does not admit of any effusion but what separates the cuticle, and occasions the formation of a vesicle, while the smaller size of the vessels admits only of the effusion of a thin fluid, very seldom convertible into pus; for "although arteries, veins, nerves and absorbents have their termination in the skin, they do not compose its substance. Its basis is a membranous substance consisting of condensed cellular matter."

The erysipelas of the face, where this affection most frequently appears, comes on with a cold shivering and other symptoms of pyrexia. The hot stage is frequently attended with a confusion of the head, and some degree of delirium, and almost always with drowsiness, and sometimes with

coma or insensibility. The pulse is always frequent, and commonly full and hard. When these symptoms have continued for one, two, or at most three days, an erythema (or redness and swelling) appears on some parts of the face. This is at first of no great extent; but it gradually spreads to the other parts of the face; and from the face it often spreads over the hairy scalp, and descends to the neck. As the redness spreads, it commonly leaves, or at least, becomes less in the parts it had before occupied. All the parts are also affected with some swelling which continues for some time after the redness has abated. The whole face becomes considerably turgid; and the eyelids are often so much swelled as entirely to conceal the eyes. When the redness and swelling have continued for some time, blisters arise of a larger or smaller size on several parts of the face; these contain a thin colourless liquor, which sooner or later runs out. The skin in the blistered places sometimes becomes livid and blackish; but this seldom goes deep, or discovers any gangrene affecting the skin. On the parts of the face not affected with blisters, the cuticle suffers, towards the end of the disease, a considerable desquamation. Sometimes the tumour of the eyelids ends in suppuration. The inflammation on the face produces no remission of the fever; and sometimes the fever increases with the spreading inflammations. The inflammation often continues for eight or ten days, as well as the fever and other symptoms attending it. In the progress of the disease, the delirium and coma attending it sometimes go on increasing, and the patient dies apoplectic on the seventh, ninth, or eleventh day. In such cases it has been supposed, that the diseased action is translated from the external to the internal parts.

TREATMENT.

“As the skin cannot suppurate, this disease must be discussed, or it will end in a mortification: hence remedies which cool and abate the motion of the vessels and of the inflamed surface are requisite.” *Kirkland, Vol. 1. p. 338.*

This disease is to be treated by the usual means of obviating inflammation by bleeding, if indicated by the state of pulse, by laxatives and by antimonials. After these evacuations, blisters may be applied to the seat of the affection, provided no symptoms of typhus fever, nor of gangrene in the inflamed parts are observable, the body being kept as much as possible in an erect posture, and the quantity and quality of the aliment should be adapted to the state of vigour or force of arterial action.

With a topical view, the best applications, according to Hoffman and Dr. Cullen, are dry mealy powders, as gum arabic, starch and rye meal, oat meal or starch. But Dr. Kirkland, in his medical surgery, gives the preference to cooling emollient applications, which he says he had been in the practice of using for more than thirty years. When occurring in the other parts of the body, erysipelas is generally preceded by drowsiness and other feverish symptoms, which depart on the appearance of the inflammation and are seldom dangerous, but the disease sometimes shifts its place, and leaving one part, attacks another.

When the heat and pain of the affected part are considerable, Dr. Beddoes says he has “experienced immediate ease and rapid recovery from the application of cold water, first by affusion, and as soon as the heat and pain had subsi-

ded by the application of linen cloths, kept constantly wet with cold water. During this process, the application of the cold water must not be remitted for some time after the pain and heat have subsided, otherwise reaction will come on and render the complaint worse."

To prevent any danger from this remedy, some mild warm aromatic infusion may be taken occasionally : such as an infusion of ginger, or *calamus aromaticus*, &c.

Some cases of erysipelas exhibit a gangrenous aspect ; and, when this occurs, the bark, wine, and other tonic and stimulating remedies should be employed internally, and the gangrene of the part prevented by spirituous fomentations and cataplasms, &c. The fomentations may be composed of a decoction in water of Peruvian bark and chamomile flowers, to which may be added, one-fourth or fifth of brandy, or spirits of wine with a few grains of camphor dissolved in it ; and the cataplasms may be composed of porter, thickened with the powder of cortex, chamomile flowers and oatmeal, or crumb of wheat bread, provided the affected part has become insensible, or nearly so ; otherwise, every strongly stimulating application, will increase the suffering of the patient without obviating the progress of the disease.

If the swelling should suddenly subside, and be followed by oppression and anxiety, with a weak pulse, it will be proper to have immediate recourse to blisters, sinapisms, and hot spiced wine, which should be given freely till the pulse rises, and afterwards at stated intervals, to prevent the return of this dangerous and menacing condition. Six or eight grains of volatile sal ammoniac, and half the quantity of powdered camphor, made into pills with conserve of roses, or any thing suitable for that purpose, may also be given with the same in-

tention, every two or three hours, or as often as urgency of symptoms may require. If pills are taken with difficulty, the same medicines may be made into a julep with simple peppermint or cinnamon water, with the addition of the powder of gum arabic and white sugar, the camphor being first softened with spirits of wine or brandy.

Sometimes a variety of the erysipelas breaks out about the middle of the body, surrounding it like a belt, (though it more frequently occupies only one side, most commonly the right under the short ribs), it is then called the *zona aurea*, or shingles, from *cingulum*, a belt or girdle. In this case there arise small vesicles, of a yellowish colour and frequently blackish. The fever, which attends this form of the disease, is generally slight, and preceded by pain in the side and some sickness at stomach.

Some practitioners have been so apprehensive of converting the erysipelas into a fever with typhus symptoms, or of its terminating in gangrene, (which has frequently occurred in intemperate livers, and persons of impaired constitutions) that they have too often neglected the necessary evacuations, indicated by the inflammatory symptoms, with which the disease is generally attended at the beginning; in consequence of which, indirect debility has been induced to the great danger of the patient.

It requires no small share of sagacity to determine the state and condition of the general system, previous to the application of blisters to cutaneous inflammations, otherwise, if a gangrene had begun, and the system was in a state of great debility, or a tendency to typhus existed, they would necessarily increase that tendency by stimulating the vessels of the skin too

violently for them to bear in their weak condition, without exhausting their remaining vitality.

Dr. Willan, in his description and treatment of cutaneous diseases remarks, that all the ancient writers, except Galen, recommended blood-letting in the treatment of erysipelas. This practice, Dr. Willan thinks, must evidently be improper in all cases, excepting those in which the disease is connected with, or partakes of the phlegmonous inflammation, and even in such cases repeated blood-letting aggravates the symptoms and protracts the disease in the climate of England.

“ In a comatose or apoplectic state, leeches or cupping-glasses to the nape of the neck may be advisable; and he asserts that he has applied blisters occasionally between the shoulders with manifest advantage, when the face and scalp were affected. Dr. Willan adds, I must however observe, that it is not safe to put either blisters or leeches on or near to the diseased surface.

“ In the erysipelas œdematodes we should employ blisters, diaphoretics, volatile alkali, and purgatives, during the first two or three days, and afterwards Peruvian bark, conjoined with diuretics. By these means the duration of the complaint may be considerably shortened.”

When the erysipelatous inflammation has a gangrenous aspect, and the fever is accompanied with typhus symptoms, a free use of the bark is necessary with wine and opium in moderate doses, and the external application of camphorated spirits of wine; and in cases where sphacelus has actually commenced, poultices frequently applied, made of wheat flour, yeast and charcoal, in the act of fermentation or rising;

in other respects, the plan and regimen should be the same as in malignant fevers.

When an offensive odour exhales from the sphacelated surface, powdered charcoal added to the poultices, is particularly serviceable for correcting it.

OF THE EPISTAXIS;

OR

HÆMORRHAGE FROM THE NOSE.

THE bleeding of the nose, as it appears in this country, agrees so perfectly with its appearance in Great Britain, as described by Dr. Cullen, and not knowing of any improvements that have been made in the treatment of it since his publication, I shall refer the reader to the chapter of his practice of physic, where he has treated of this disease.

OF THE HEMOPTYSIS,

OR

HÆMORRHAGE FROM THE LUNGS.

THIS disease belongs to the fourth order of the first class.

When after a painful sensation in the thorax and titillation about the glottis, accompanied with febrile symptoms, blood is brought up by coughing, of a thin consistence and of a florid colour, we may conclude that it comes from the lungs.

The blood vessels of the lungs are more numerous than those of any other part of the body of the same bulk. These vessels of the largest size as they arise from the heart are more immediately than in any other part, subdivided into vessels of the smallest size, and these small vessels spread out near to the internal surfaces of the bronchial cavities, are situated in a loose cellular texture and covered only by a tender membrane; so that considering how readily and frequently these vessels are overcharged with blood, we may understand why an hæmorrhage from the lungs is next to that of the nose, the most frequent of any. When the blood begins to flow it irritates the top of the larynx; to relieve this the patient coughs or rather hawkes, which brings up a little blood of a florid colour and somewhat frothy appearance.

During this action there is commonly some noise in the trachea as of air passing through a fluid. This is often brought up copiously in the act of coughing.

TREATMENT.

An hemoptysis may generally be moderated by avoiding or removing irritation that might concur to increase or promote it; hence in every case where the motion and force of the circulation is increased, every part of the antiphlogistic regimen is to be observed; cool air is to be admitted, and cool drinks of a sedative quality, by which I mean those which abate arterial action, are to be administered. In addition, therefore, to bleeding, purging and a refrigerating regimen, the patient should take from ℥i. to 3j. of sal nitri dissolved in an infusion of tamarinds and manna, or of senna and cream of tartar every hour till the hæmorrhage ceases. When the hæmorrhage, from hawking or coughing up of blood continues without much diminution after free blood-letting, double linen cloths wrung out of cold vinegar and water, applied to the thorax and frequently renewed, seldom fail of suspending the disease; the recurrence of which, may generally be prevented by subsequent purging, and the application of an epispastic to the thorax, especially when aided by the internal use of saccharum or extract. saturni, administered from one to four grains and repeated every hour till the hæmorrhage ceases, and afterwards at longer intervals. In certain cases of hemoptysis and other hæmorrhages the resistance of the small arteries is not in due proportion to the usual vis a tergo, or propulsive power of the heart. Hence this form or state of the disease is called passive, but in other cases the vis a tergo being excessive forces the ends of the

small arteries open, though they may be in a healthy state. In the latter case, remedies to reduce the excitement and force of the circulation are requisite, in the former, those that give tone to the extreme vessels without increasing the force or frequency of the action of the heart and arteries.

Opium has been observed to increase the hæmorrhage if given while the pulse is strong, quick and active. But after copious and repeated venesection it frequently prevents a recurrence by obviating excess of sensibility and increasing excitement.

Of the good effects of blisters in preventing a recurrence of the discharge of blood when applied to the thorax after the disease has been of some days continuance, I have frequently been a witness.

Issues which have been supposed by several writers of experience to be more certain in that respect than blisters, I have never found of the least service.

Flannel worn next to the skin in debilitated habits is always useful, and has been frequently known to prevent a return of this complaint.

As a preventative of the recurrence of this disease moderate exercise, especially that of sailing, because it is not attended with much muscular exertion, is peculiarly serviceable.

At the commencement of this complaint too great caution cannot be observed with respect to indulgence in any thing that has a tendency to quicken the pulse, or heat the body ;

for in the early stage it is always inflammatory and is accompanied with fever.]

Dr. Percival observes, that “ in the treatment of the hæmoptysis the antiphlogistic plan is now generally adopted in most parts of England, and during the incipient stage of the disorder, when the inflammatory diathesis commonly prevails, much injury may be done by heating styptics and rough astringents; but when the disease has been of some continuance, or has frequently recurred, its type is often changed. And many cases occur which even in their commencement, indicate great laxity of the solids and tenuity of the fluids, local debility of the extreme arteries in the lungs and bronchiæ. Under such circumstances venesection, nitre and the debilitating class of medicines are highly improper, though great authorities have sanctioned their use, without sufficient discrimination. When the discharge of blood has continued for a considerable time, a new state of the system is induced. “ The heart and arteries seem to lose their due degree of tone; an increase of irritability takes place in the ruptured vessel, and in those which are contiguous to it; and thus the impetus of the circulation is partially augmented with a diminution of its general energy.”—The correctness of this remark is exemplified in cases of ophthalmia.”

“ There are two distinct stages in the progress of ophthalmia. The first is characterised by a sense of heat, acute pain, intolerance of light, and a florid colour of the vessels of the conjunctiva, indicating an increase in the action of the vessels, and an increased quantity of blood in those vessels; the second distinguished by a sense of weight, *obscure* pain and turgescence of the vessels, which in this stage are of a dark purple hue, indicating an action less than natural, and is the consequence of the preceding increased action. But between

these extreme points, there are numerous gradations in the series of arterial action. It is however only by keeping these constantly in view, that the means of cure can be applied correctly and successfully, or that remedies of the most opposite nature can be used in succession with advantage."

Remedies, therefore, which rouse and strengthen the vital powers and excite a vigorous and equable action in the vascular system, are clearly indicated in such cases of hæmoptysis, as shew evident loss of arterial strength.

A blister applied to the back has *cured* a nasal hæmorrhage. Wine drank in moderation at stated intervals of three, four, six or eight hours, has cured both hæmaturia and hæmoptysis when other means have failed. Laudanum in small doses has "also had the same effect in numerous instances. Dr. Percival says, a lady of a very delicate and irritable habit was cured of an hæmoptysis by taking a grain of opium every twelve hours. She gradually increased the dose to twenty grains per day, and after the disease left her she continued it in the quantity of ten grains every twenty-four hours for nearly nine years."

Several persons in America have frequently found relief in cases of hæmoptysis, from swallowing slowly a tea spoonfull or more of dry Lisbon salt in fine powder, whose systems were in an infirm and debilitated state; and have frequently prevented a recurrence of the complaint by taking Peruvian bark freely with the moderate use of claret and making use of a more substantial diet than usual, wearing at the same time in the cold season a flannel shirt and drawers, and worsted stockings, and taking moderate exercise in the open air.

The late Dr. Claypoole, of Norfolk, in Virginia, informed me that he frequently suppressed the hemoptysis in himself by taking six drops of the oleum succin. mixed with the yolk of an egg and white sugar. He was very much relaxed and debilitated at the time by the summer heats and unwholesome air of Norfolk.

The late Dr. Peter Glentworth, of Philadelphia, after having been subject to frequent recurrences of hemoptysis, (which had become more frequent and alarming while he lived entirely on a milk and vegetable diet), prevented the return of the disease in himself by taking half a pint of strong hot wine sangree, every night for a few weeks, drinking three glasses of pure wine in the course of the day, and living on a more substantial and invigorating diet.

Before he made trial of the hot wine sangree at night he had frequently been prevailed on to take part of a glass of wine before dinner when he felt weaker than usual, which generally occasioned a cough and a return of the hemoptysis. But he had no return of the complaint after he had taken the warm sangree a few nights and had changed his mode of living.

The following prescription is recommended for hemoptysis and other hæmorrhages in the third volume, London Medical Transactions, and bids fair to afford relief in debilitated and very irritable habits.

R. Extract. saturni ʒi. et ʒvi.

Tinct. thebaic. ʒij. m.

Twenty drops are directed to be taken every four hours, or oftener in a small draught of cool barley water, with the addition of a little gum arabic.

Sea-salt has of late become a very fashionable medicine in cases of hæmoptysis. But its indiscriminate use must certainly be improper. As this salt not only assists digestion but invigorates all the bodily functions by stimulating and contracting the fibres, it is evident that its exhibition can only be proper in cases of general debility or atony of the extreme arteries, or when the general vigour of the arterial system is impaired.

A very interesting example of the beneficial effects of the powder of digitalis in this disease, may be seen in Duncan's Medical Commentaries for 1786, page 315.

The tincture of digitalis from its usual effects on the pulse after a few days use, has induced many physicians to make trial of it in this disease, but they differ so much in their account of its effects, that I am at a loss to determine whether it is a remedy that can be depended on in this disease or not. If it stimulates the arterial system to the degree asserted by Dr. James Sanders of Edinburgh, soon after it is received into the stomach instead of being beneficial it must necessarily aggravate the disease till its stimulating operation has induced indirect debility in the vital functions. But from its beneficial effects in the incipient stage of phthisis pulmonalis, I very much question the correctness of Dr. Sanders's opinion, and should not hesitate to employ it in any case of hæmoptysis accompanied with preternatural frequency of pulse in conjunction with frequent venesection and copious purging.

OF THE PHTHISIS PULMONALIS,

OR

CONSUMPTION OF THE LUNGS.



THIS disease is defined by Dr. Cullen and Dr. Thomas Reid, to be an expectoration of purulent matter from the lungs attended with hectic fever.

There are however many instances of the disease terminating fatally, without any purulent matter appearing in the expectoration at all. I have seen three cases of this kind myself, in each of which the whole internal substance of the lungs was filled with a whitish solid substance resembling new cheese.

The phthisis pulmonalis may therefore more properly be defined an affection of the lungs, attended for the most part in its progress or advanced stage with ulceration and expectoration of purulent matter, and always with more or less fever of a remitting type, commonly termed hectic.*

* Dr. William Heberden, in his Commentaries p. 186, says that in the clearest remissions of hectic fever from internal suppuration or ulceration, there is always some preternatural quickness of pulse, so as to exceed the number of pulsations in a state of health at least ten strokes in a minute. The fits of the hectic also vary from one another, seldom continuing to return in the same manner for more than three times together. The chill or shivering is

The following symptoms denote the approach of this disease, viz. a slight and short cough, which becoming habitual, is seldom noticed by those affected till succeeded by additional symptoms. This cough is generally aggravated by the slightest alteration in the temperature of the atmosphere, especially to a colder state, the consequence of which are catarrhal symptoms, accompanied with slight stitches in the thorax, particularly under the sternum. Hence the patient in the incipient or approaching stage of this disease, is more affected during the winter and spring seasons than at any other time; the symptoms generally decreasing as the summer increases. In process of time the breathing becomes easily hurried by any bodily motion, the patient loses flesh, complains of being frequently indisposed, and is generally languid and feeble till after dinner, which he generally eats with a good appetite, but has seldom any relish for his breakfast.

When the cough is accompanied with dyspnœa, and is dry or sonorous, or only accompanied with tough, white, frothy phlegm, it is a strong indication that tubercles are formed, and when to these symptoms a fever is joined, the disease may

sometimes immediately succeeded by perspiration without any intervening heat; sometimes it begins with a sense of heat without any preceding cold; and the patients sometimes experience the usual chillness without any following heat or sweating. The fits therefore of the hectic are usually shorter than that of an intermittent or remittent, not only in the three stages of chill, heat and perspiration, but one of them is often wanting and sometimes even two of those stages.

Dr. Heberden says, he had observed all the symptoms of pulmonary consumption except expectoration of blood or pus in a person whose lungs after death were found sound, owing to a diseased state of his mesenteric glands; he however adds, "this happens so very seldom that very little doubt is to be made of the diseased state of the lungs, where all the other symptoms concur, though these two should be wanting.

Commentaries on the History and Cure of Diseases, p. 372

be considered as begun, and may with propriety be called the first stage, during which the pulse is always more or less hard, and more frequent than in health, indicating an inflammatory affection.

If proper means are not employed for the relief of those symptoms, the fever gradually becomes more intense, the cough more troublesome and frequent, especially upon the patient's lying down at night; and is longer before it abates than is usual in cases of common catarrh. The fever and cough become perceptibly increased after eating, especially of solid meats, accompanied with a sense of burning heat in the palms of the hands and soles of the feet, with flushing of the face, most commonly of one cheek.

After some time the violence of the fever and cough remits considerably, and in many cases intermits about two or four o'clock in the morning; the expectoration of phlegm at that time becoming more copious and the fever going off with more or less perspiration about the breast and upper parts of the body.

The fever and cough, however, generally return again about noon, and go off about four or five o'clock P. M. returning again between six and eight o'clock in the evening, and harass the patient till two or three o'clock in the morning, after which the feverish symptoms subside and he gets some sleep, but for the most part rises unrefreshed, feels a general languor and appears pale and bloated in the face.

The expectoration now becomes more copious, more viscid, more opaque, and at length of a deep yellow or greenish colour and of a purulent appearance, but still blended with a considerable portion of mucus.

When the fever has regular remissions, when the sweats come on every morning, and when the patient expectorates mucus copiously mixed with pus, in small globular masses of a deep yellow, greenish or ash colour, the disease may be considered as in its second stage, and may be denominated a confirmed pulmonary consumption.

In this stage, the fever, after remitting in the morning, comes on about the middle of the day, continues two or three hours, then intermits and returns again about five or six o'clock in the afternoon.

The patient now becomes daily more and more emaciated, his eyes become hollow and dull, his cheeks become prominent, and his nose sharp, his throat sore, his cough hoarse and hollow, and expectoration difficult; his countenance appears expressive of anxiety and dejection, particularly in the fore part of the day, but in the afternoon he generally appears more lively, and he feels less debility and of course flatters himself that he is better and may yet recover. But at length a coliquative diarrhœa succeeds, his expectoration together with the sensible heat of his skin diminishes, while his thirst increases, his legs swell, his strength rapidly declines, and death puts a period to his hopes and suffering together.

The succession of symptoms which I have now described, occupies more or less time in different cases.

In the climate of Pennsylvania they very often take up several years, the symptoms appearing to be aggravated every winter and spring, commonly abating and sometimes almost disappearing during the summer, but returning again in the winter; they at length prove fatal towards the end of spring or beginning of summer, and not unfrequently in the month

of July or August when the weather happens to be intensely hot.

PROGNOSIS.

In this disease, the prognosis is for the most part unfavourable; of those affected by far the greater number die. Some, however, though the number has been very small, have recovered completely, after having been in very unpromising circumstances. In the few that I have seen recover the disease was preceded by hemoptysis; I have also seen many persons with chronic catarrh recover, where it was mistaken by the inexperienced for true phthisis pulmonalis, but never a single case where the disease was preceded by the symptoms, which denote the existence of tubercles in a state of ulceration.

“The danger of phthisis, from whatever cause it may arise, is most certainly to be judged of by the degree to which the hectic and its consequences have arisen.”

“From a certain degree of emaciation, debility, profuse sweating, and diarrhœa, no person recovers.”

The pregnancy of women, has often retarded the progress of the disease, but commonly it is only till after parturition, when the symptoms of phthisis return with greater violence, and in general soon prove fatal.

REMOTE CAUSES.

The cold, wet, and changeable weather, which occurs in many parts of United America in the winter and spring seasons, render the inhabitants more liable to catarrhal, pneumo-

nic, and rheumatic affections, than those of milder and more regular climates.

The same causes subject those, whose constitutions favour their operation, to glandular obstructions, scrophulous complaints, and tubercles in the substance of the lungs. An abstemious regimen, and too much confinement to the house, in a hot, confined, and relaxing air, by debilitating the whole system, and exposure afterwards to the cold damp air, frequently lays the foundation of this complaint.

On examining the lungs of persons, who have died of pulmonary consumption, besides open ulcers, little hard tumours called tubercles, are generally found, some with pus, others upon being cut open, discover a little bluish spot, of the size of a small lead shot. In some, the tubercles are perfectly solid and of a whitish colour throughout the whole substance; and, I have seen more than one instance of their resembling new cream cheese, both in colour and consistence. In the case of a negro child, about two years of age, which was supposed to have died of what has been erroneously called a worm fever; which was opened at my request by the late Dr. Waters, the author of the *Abridgment of Benjamin Bell's Surgery*, this was particularly observable.

A great number of exhaling vessels open into every part of the body, these secrete a fluid, which preserves their cavities moist, and by lubricating the surface of the different viscera, enables them to move on each other, without difficulty or inconvenience.

In the lungs these vessels secrete a large quantity of lymph, which is carried off by the air in respiration.

The orifices, or apertures of these vessels, from any cause which excites inflammation, (particular from the frequent recurrence of catarrh) may be altered so as to secrete a viscid matter, like the sily gelatinous substance or coagulable lymph of blood, which has the property of coagulating immediately after secretion.

The exhaling vessels in the lungs, having their orifices so altered by catarrh, or other cause, as to produce this viscid condition of the lymph, a less quantity will be secreted; and, if from the effects of cold and moisture, the ends of the exhaling arteries on the surface of the body are contracted, and a larger quantity of fluids than usual repelled and determined to the lungs, they will be loaded and oppressed; their parenchymatous substance will become more dense and inelastic; the diameters of the various branches of the pulmonary artery and vein, will be lessened by the pressure, and consequently the circulation of the blood through this organ impeded. When the lungs are in this state the patient will breathe quick, and with difficulty, he will feel pain in different parts of the thorax, and a general soreness and sense of fullness upon a deep inspiration.

If disease produces such an alteration in the exhaling vessels, as to occasion such viscosity in the lymph which they secrete, the same cause continuing to act, will occasion a density in the substance and texture of the vessels themselves till their extremities coalesce and become obliterated, or the lymph obstructed in them becomes solid and firm. These tubercles were formerly supposed to be diseased lymphatic glands; but the dissections of the ingenious and discerning Mr. Stark (who in the prime of life fell a victim to his zeal for experimental inquiries), clearly prove that they are the effect of diseased exhaling vessels, and not glands. Glands, however, have been discovered by Mr. Cruickshank in the

lungs, as well as in the bronchia; of which he has given an account, in his anatomy of the absorbent vessels, at pages 129 and 177, published in 1786.

TREATMENT.

From the view which has now been given, of the nature and causes of pulmonary consumption, the indications for preventing the disease from forming in those who have symptoms, which indicate its approach, appear to be to avoid the exciting causes and to counteract the predisposition by such means as have been discovered by experience to have the effect of withdrawing the determination from the lungs, and fortifying the system generally.

The means best adapted to this end are to wear flannel next to the skin at all seasons in this climate, excepting the two sultry months of July and August, during which short period fine muslin or calico may be substituted.

Worsted stockings have also been found, when worn under fine silk chief part of the year, particularly serviceable. These preserve an electric atmosphere around the patient, which in some measure prevents the dampness of the air from abstracting too much animal heat and checking the perspiration; especially if the feet are preserved dry by means of water-proof shoes or boots.

But when from a bad structure of the thorax, neglect of rules, or unavoidable exposure to the remote causes, symptoms come on which indicate the existence of tubercles, and the cough becomes dry and obstinate or attended only with an expectoration of tough white mucus mixed with froth, or which is sometimes streaked with blood, attended with stitches

in different parts of the thorax, and these stitches are increased upon coughing, and accompanied with hectic heats, the disease may be considered as in its first or inflammatory stage; and to stop it from terminating in ulcerations of the tubercles, recourse must be had immediately to blood-letting in quantity and frequency proportioned to the existing symptoms of local inflammation as indicated by the pain and fever; mild purgatives and the antimonials usually employed in other inflammatory affections are also to be employed, together with the rigid observance of the antiphlogistic regimen. A blister should also be applied to the thorax as soon as the plethoric state of the lungs has been diminished by bleeding and purging, and should be renewed as often as it begins to heal.

When by these means the immediate danger of suppuration and ulceration is prevented, an issue or a seton is of the highest service in preventing a recurrence of those threatening symptoms.

Drinks, the most cooling and demulcent are to be employed, and when the cough continues, only from irritability, gentle anodynes and mucilaginous liquids are requisite. For this purpose, tea, made of linseed or marsh-mallows, quince seed, the leaves of the tussilago or coltsfoot, &c. or a decoction of barley, liquorice root and gum arabic, emulsions of almonds, and gum arabic, &c.

Dr. Mudge, of Plymouth, relates that he was cured of an incipient phthisis pulmonalis, attended with dry, husky, teasing cough and hectic heats, by occasional bleedings, cooling and laxative medicines, a steady course of temperance, clothing adapted to the conditions of the seasons and weather, and keeping open an issue for twelve months made by caustic between his shoulders, so large that it held between forty and fifty peas of the common size.

The chief of the means most proper for preventing the formation of tubercles, and for the cure of this disease in its incipient stage before suppuration or ulceration have taken place, have now been enumerated; but when they are not employed in due time or submitted to with sufficient punctuality, exactness and perseverance, the tumours already described suppurate and become open ulcers, accompanied with a fever and an expectoration of purulent matter.

In this stage of the disease, new indications different from the former arise.

The healing of an ulcer is supposed by eminent teachers to depend on procuring an absorption on its surface greater than the secretion or deposition of purulent matter, and those medicines which induce nausea and sickness having been observed to produce this effect, and the digitalis in particular in an eminent degree; numerous trials have been made with the last mentioned remedy in different parts of the world, the result of which as far as I am qualified to judge appears to the credit of this medicine when employed in and restricted to the first and to the early part of the second or ulcerated stage, or so long as the frequency and hardness of the pulse indicates the existence of inflammation in the ulcerated tubercles.

The following are the forms and manner in which it is most commonly exhibited.

℞. Fol. digital. purpur. recent. exsicc. unciam unam.—
Spir. vin. rect. ℥viii. m. digere in leni calore per dies septem, deinde cola. Or

Infuse four ounces of the fresh leaves in five ounces of rectified spirit of wine, digest for seven days in a gentle heat and strain off the liquor.

From ten to fifteen drops of either of the above tinctures, are to be given three times a day, increasing two drops every second day until the habit begins to feel its influence, and the pulsations of the arteries are reduced below the healthy number. The number of drops is then to be diminished in the same gradual manner until the medicine ceases to have any sensible effect on the pulse, the number is then to be again increased as at first, until its effects are visible.

By these means the circulation may with the greatest safety be kept under the influence of the remedy for weeks, and even for months.*

* Dr. Baidon of London when surgeon of the East India Company's ship Alfred in 1803, took for a cough accompanied with hectic fever which supervened the rupture of a blood vessel in his lungs, half a grain of digitalis in the form of pills gradually increasing the quantity daily till he took eleven grains a day: by this his pulse which when he began with the digitalis was about one hundred and ten, was reduced to forty, and by taking five grains a day, was kept at that rate for nearly three weeks. His pulse then sinking to thirty-six and intermitting, the pills were discontinued; but it was nearly a month before his pulse recovered its natural standard, about seventy-two. No sickness at stomach was ever induced, and only once or twice objects appeared double to him. The only troublesome effect was great costiveness and sense of heaviness in his head, that always inclined him to lie down.

Dr. Baidon observed that after the digitalis had taken effect, his pulse immediately increased in frequency upon rising out of bed and standing up, and that upon sitting down the number of pulsations decreased considerably, and that upon lying upon his back it decreased much more. Thus during the time it was forty while lying, it was about seventy-five when sitting, and above one hundred when standing; and when he turned on either side it fell two or three and intermitted. In exhibiting digitalis, he thinks it should never be increased more than half a grain a day unless the symptoms are very urgent.

Med. & Surg. Journ. Vol. 3. p. 272.

To those who prefer this medicine in substance a single grain of the powder, prepared from the leaves carefully dried in the shade (excluding the fibrous parts) is a medium dose for an adult to begin with, increasing half a grain every second day until some effect on the stomach, head and pulse be evident.

As the digitalis sometimes operates as an evacuant with extreme violence even in small doses, Dr. Darwin advises a saturated tincture of it as more manageable than in any other way: for this purpose he directs two ounces of the powder of the leaves to be infused in a mixture of four ounces of rectified spirit of wine and the same quantity of water. Of this from thirty to sixty drops from a two ounce vial are to be taken twice in the morning part of the day, and to be so managed as not to induce violent sickness. If sickness nevertheless comes on, the patient must for a day or two omit the medicine and then begin it again in reduced doses.

Ipecacuanha, in doses of from one to three grains, most commonly two grains made into pills with castile soap, or into boluses with conserve of roses, has also been employed with most decided advantage in cases of confirmed consumption before the patient's strength was greatly exhausted by the fever and night sweats. This medicine given at such intervals as to induce nausea of some continuance, as well as the digitalis, always reduces the frequency of the pulse, and moderates the fever under the recited circumstances.

Blisters and opiates at night are generally proper auxiliaries, but the latter should be restricted to cases in which there is no great pain in the thorax, or hardness and tension of the pulse.

Sailing, when it induces vertigo and stomach sickness, has also been found to diminish the frequency of the pulse and to promote pulmonary absorption, and in some cases has effected a complete cure ; hence the utility of sea voyages. Swinging, which appears to act on the same principle, has been introduced into practice by Dr. Carmichael Smyth.

The powerful effects of promoting absorption by inducing sickness has often been observed in cases of dyspnœa connected with anasarca, which empties the collected fluid, and removes the difficulty of breathing in a few hours.

The common means of promoting absorption of matter in ulcers and of thickening the matter contained in them by taking the bark and opium internally, or by metallic salts, as of mercury, steel, zinc, and copper in small quantities, have been repeatedly used for the same purpose in phthisis pulmonalis ; and when the periodical accessions of the fever have been regular and the expectoration free and without pain, they have sometimes appeared to afford considerable benefit. Mercury in particular, as it cures venereal ulcers, and as pulmonary ulcers resemble them in not having a tendency to heal, and in their tendency to extend themselves, might be expected from analogy to succeed in the cure of consumption.

Dr. Sims indeed tells us that he has cured persons affected with phthisis pulmonalis, connected with a venereal affection, by the use of calomel in small doses, but adds, that he had never been so bold as to employ mercury after the lungs had supplicated, though he had been assured that a French physician had employed it under such circumstances with success. *Sims on Epidemical Disorders, p. 119. 1768.*

I myself frequently saw a mild preparation of mercury composed of hydrargirus and chalk triturated together, employed by the late Dr. Thomas Bond at the Pennsylvania Hospital in the year 1772, but not one to whom he prescribed it recovered.

Dr. Mossman of England, in a paper dated, at Bradford, November 24th, 1800, published in the 5th volume of the London Medical and Physical Journal, observes that on the same principle that mania and pregnancy, suspend the progress of phthisis, mercury may be expected to produce a similar effect when it induces salivation.

As phthisis pulmonalis however generally returns with greater violence, and makes more rapid progress after the removal of mania, and especially after parturition in all the cases in which I have seen mercury employed, which have been a considerable number, the progress of the disease to its fatal termination has been more rapid after the affection of the mouth had subsided than where mercury had not been employed.

The late experienced Dr. Cullen remarks in his First Lines of the Practice of Physic, section 919, that “mercury so often useful in healing ulcers has been speciously enough proposed in the treatment of phthisis pulmonalis; but whether that it be not adapted to the particular nature of the ulcers of the lungs, occurring in phthisis, or that it proved hurtful, because it cannot have effect without exciting such an inflammatory state of the whole system as in a hectic state must prove very hurtful, I cannot determine; but upon many trials which I have seen made, it has proved of no service, and commonly has appeared to be manifestly pernicious.”

The late **Dr. James Currie** of **Liverpool**, in the second volume of his **Medical Reports**, published in the year 1804, laments that in confirmed phthisis pulmonalis, the hopes entertained of the digitalis have not been confirmed, though it is of essential benefit in the predisponent state, and even in the incipient stage of the disease; and in families where this fatal disease is hereditary, the use of digitalis as a prophylactic, he has no doubt will save many a life that would otherwise be but short.

The same author mentions that the practice of administering mercury in confirmed phthisis had been revived by **Dr. Rush** and other physicians of Philadelphia, yet as it had failed in the hands of **Dr. Dobson** as well as in those of **Dr. Duncan**, and the late **C. Webster**, he should not have had recourse to it anew, if it had not occurred to him that it was reasonable to try it in combination with digitalis, though each might have failed separately. Accordingly (he says) about twelve months ago, "I put five cases of confirmed phthisis pulmonalis on a course of mercury within a short space of time, having first bridled the circulation in each, by means of digitalis. I pushed the mercury so far as to affect the mouth in all these cases. They all however terminated fatally, though I really think the lives of all of them were prolonged. In one of them the effects appeared so considerable, that at one time I was led to entertain a slight degree of hope."

Mr. R. Reece, author of the **Medical Guide**, says, mercury has been employed for the purpose of increasing the action of the absorbent vessels of the lungs in consumptive cases and adds that a case of pulmonary consumption, was sometime since published in a periodical work, as cured by small doses of mercury under the direction of **Dr. Beddoes**; but that in the trials he had made with it in the different stages of the

disease, it had by no means answered his expectations, having in every instance considerably provoked the cough, and increased the febrile symptoms.

“Dr. Cullen maintained that when pus is expectorated in phthisis pulmonalis, it is always the consequence of ulceration of the lungs; but Dr. Simpson and Sir John Hunter have established, that pus is necessarily produced by *all surfaces* in a certain state of inflammation to which mucous membranes are particularly prone. Hence it is not always possible to distinguish the matter expectorated in phthisis from that which is expectorated in cases of common catarrh.”

Sanders on Pulmonary Consumption.

Common pus excluded from the air does not appear to have any corroding quality, and in that condition is frequently absorbed and taken into the circulation without occasioning any fever or other sensible effect upon the system; but when exposed to the air it acquires a very different quality, as well as the surface from whence it is secreted, a very different aspect.

When ulcers are in that state of action, during which they heal, the matter discharged from them assumes the colour and consistence of laudable pus, the formation of which requires an action of the system very little stronger than that of usual health, to maintain which such a diet as the patient has been accustomed to when in health, or rather more stimulating and nourishing will be advisable, which is to be reduced or altered if inflammatory symptoms tend to violence; but augmented and assiduously administered together with medicines of a cordial and tonic kind, if the actions of the system languish or indicate a state of debility.

When the suppurative process begins to degenerate, and instead of resembling laudable pus, the expectorated matter is thin viscid and transparent; the remedies should be of the more active kind and persevered in, and their doses increased in proportion to the difficulty experienced in rousing the vital functions to the requisite activity; and even though a considerable degree of fever should be excited, they should be persevered in until the expectorated matter assumes the proper form.

We are not to be deterred by the notions that the access of air to the wounded surfaces, or the continual motion of the lungs, frustrate all attempts to induce a cure, for ulcers often form in the lungs and heal spontaneously. In fine, what is chiefly to be dreaded is the spreading and degeneracy of the ulceration. When therefore the sputa become sanious, ill-coloured, fetid and putrid, the most invigorating diet and medicines should be employed at short intervals, observing to render all the aliment as grateful as possible; and as super-oxygenated air has a powerful effect in promoting the activity and healthy granulation in the diseased surfaces, the patient ought under such circumstances to remove if possible to a healthy situation in the country, or to inhale as much as possible of air rendered pure by art; with this view the gas or vapour which is produced by pouring sulphuric acid, (spir. sulphur or oleum vitrioli) upon powdered nitre, (salt petre) contained in open china cups or bowls placed in different parts of the patient's chamber, is recommended by Dr. James Sanders of Edinburgh in his treatise on phthisis pulmonalis, published in the year 1808.

When the disease has continued so long as to exhaust the strength of the patient to a great degree and he becomes ema-

ciated and dissolved as it were with night sweats and profuse expectoration, neither digitalis nor any other remedy that promotes absorption by inducing sickness or vertigo has any effect in retarding the progress of the disease. The chief that can be done is to palliate the symptoms till death puts a period to the sufferings and hopes of the patient.

For this purpose the patient may drink freely and at pleasure of beverage made of sulphuric acid and water sweetened with white sugar. Infusions of flowers of chamomile, columbo root, horehound &c. and to render his nights comfortable, he should take at bed time from one to three grains of solid opium, or from twenty-five to seventy-five drops of the spirituous tincture of opium.

“ If one ounce of the pure acid of lemons or two ounces of orange juice or the syrup of barberries be added to every grain of the opium, or to every twenty-five drops of laudanum, instead of stupifying the person who takes it, and of being attended with painful costiveness, it will not only prove laxative but induce, first, a cheerfulness not attainable by the use either of opium or strong liquors alone, and will afterwards bring on a gentle and refreshing sleep.”

Though the patient should be confined to milk and vegetable diet and be prohibited from all kinds of fermented or spirituous liquors in the early part of the purulent stage of this disease, the object being now to palliate symptoms and to render the remains of life more supportable, after the night sweats have become profuse and weakening and the morning intermissions evident, he may be indulged with a small quantity of brisk small beer, porter and water, or claret and water, or artificial Seltzer water, wine whey, &c. and with flesh meats,

shell-fish, or eggs soft boiled once or twice a day, when freest from fever.

In these circumstances whatever occasions an agreeable sensation in the organs of digestion, and at the same time gives them a gentle degree of tone, will frequently abate the quickness of the pulse, and moderate the violence and frequency of coughing.

The irritability however in many constitutions is so great through the whole course of the disease, as to render all kinds of strong liquors inadmissible, as well as every kind of animal food, especially in a solid form. In such cases rennet whey, mush and milk, and the mucilaginous farinacea will be preferable to any other kind of aliment.

In the year 1809, Mrs. A.... after having to all appearance nearly recovered from a confirmed phthisis, (with which she had suffered more than a year); by occasional blood-letting, the antiphlogistic regimen, and the free and long continued use of digitalis, increased her cough by taking cold during a long journey, and all her former symptoms returned. She being then absent from the city applied to a physician in the country, who after having reduced the inflammatory symptoms by bleeding, antimonial powders and a blister to the thorax, administered calomel in small and repeated doses till it occasioned salivation, which he endeavoured to keep up by administering the same remedy occasionally. The consequence was an increase of pain in the thorax with an expectoration of very fetid purulent matter from the lungs, and a constant flow of bloody saliva from the mouth with an

incessant fever and dyspnœa, which very soon put a period to her life.

A similar event was produced by salivation in Mr. J. T. of Philadelphia in the summer of 1810. The mercury was employed cautiously both internally and externally after all inflammatory symptoms had subsided, and the expectoration of purulent matter had become free. As soon as the gums swelled and salivation began to appear, the pain in the thorax accompanied with a quick, hard, small pulse and incessant racking cough, with expectoration of thin frothy mucus, mixed with blood, returned, which required bleeding, purging, and blistering to subdue. After which the purulent expectoration with the night sweats and debility returned and increasing daily, put a period to the existence of the patient much sooner than there is any reason to suppose would have been the case if no mercury had been employed.

OF THE CATARRH.

THE catarrh is placed by Dr. Cullen in that order of diseases denominated profluvia, and is known by an increased secretion of mucus, from the glands of the mucous membrane which lines the nostrils, fauces and bronchiæ, attended with more or less pyrexia, and always with some cough.

This disease has been frequently treated of under the title of tussis or cough, but though a cough always attends the chief form of catarrh which is occasioned by the increased secretion of mucus from the bronchiæ, it is so often a symptom of other affections that are very different from one another, that it is improperly employed as a generic title.

This disease generally begins with some difficulty of breathing through the nose and a sense of fullness, attended with some obtuse pain and sense of weight in the forehead, as well as some difficulty and uneasiness in moving the eyes.

These symptoms are sometimes at their commencement, and always soon after, attended with the distillation of a thin fluid from the nose, and sometimes from the eyes, which appears to be somewhat acrid both by the taste and by its fretting the parts over which it passes.

With these symptoms there is commonly a sense of lassitude over the whole body, and the patient is sometimes affected with sensations of cold or shudderings, especially upon exposure to air a little colder than ordinary. The pulse also generally becomes more frequent and the skin hotter towards evening.

These symptoms seldom continue long before they are accompanied with some hoarseness, and a sense of roughness and soreness in the trachea, and with some difficulty in respiration, attended with a sense of straightness in the thorax, and a cough which seems to arise from some irritation felt at the glottis.

The cough is generally at first dry, occasioning pains about the chest, and more particularly within the anterior part

thereof. Pains resembling those of the rheumatism are also frequently felt in several parts of the body particularly about the neck and head.

The appetite is at the same time impaired, and the patient is more thirsty than usual.

These symptoms however, do not continue long with the same degree of violence. The excretion of mucus which at first was thin and brought up with difficulty, gradually becomes thicker, and is brought up more copiously, and with less frequent and less violent coughing. The hoarseness and soreness of the trachea, and the febrile symptoms, abate at the same time, and the cough becoming less frequent, and the expectoration diminishing without return of pain, the disease soon after commonly ceases altogether.

When the excretion becomes copious and is brought up by coughing of a thicker consistence and yellowish colour, it is a sign the inflammatory affection is giving way ; but when the excretion is very profuse, is frequently brought up by coughing, and is accompanied by a difficulty and quickness of respiration, it is an indication of great laxity, atony, and dilatation of the exhaling vessels.

Such is generally the course of this disease, which is commonly neither tedious nor dangerous.

It is now almost universally admitted, that Dr. Cullen erred in placing Catarrh among the Profluvia, and that it ought to be considered as an inflammatory affection of the mucous membrane, lining the nostrils, fauces, trachea and

bronchiæ. Hence it ought agreeably to the rules of Nosology, to precede the peripneumony and pleurisy.

This inflammation frequently terminates in a train of symptoms, much resembling those of phthisis pulmonalis, but may generally be distinguished from phthisis by the circumstance of patients in extreme debility and emaciation, consequent to bronchial inflammation, being able to distend the chest to its full capacity without feeling much uneasiness, and not any pain, because the substance of the lung is not diseased. They lie down in bed more easily than consumptive patients; have no shooting pains in the chest, and though they sweat, there is nothing like that profuse discharge from the skin which accompanies the solution of the hectic paroxysm.—But the appearances of the expectorated matter can by no means be exclusively depended upon.—See Badham's *Observations on Bronchitis*.—1808.

CAUSES.

The particular cause of catarrh, is exposure to a colder temperature, after being heated or fatigued, and especially when both these circumstances concur.

In many persons after frequent recurrences of this complaint, the sympathy between the vessels of the skin and those of the mucous membrane of the fauces and bronchiæ frequently become so remarkable, that a cough attended with expectoration of thin gleety mucus is immediately brought on by only wetting the feet and letting them remain damp, or by sitting a few minutes in a damp or cooler apartment than ordinary. In these cases the complaint instead of being brought on by subsequent and sudden exposure to a hotter temperature as taught by Brown, Beddoes and Garnet, is

almost invariably prevented by it, especially if the instant these effects are perceived, the patient puts his feet into warm water, and takes a few draughts of any mild warm liquid, that is grateful to the palate; and more especially if he takes an anodyne at the time of going to bed, and lies under a sufficiency of warm covering to favour perspiration. This is a fact which I have witnessed in numerous cases, as well as repeatedly in my own person.

When the inflammation of the mucous membrane has taken place, the system is in a very different condition, and requires to be treated in a very different manner. In this circumstance it bears a striking analogy to the intermittent fever, in the cold stage of which the remedies which are highly beneficial, are as pernicious in the subsequent hot stage or exacerbation of the paroxysm.—For want of attention to these circumstances, Dr. Beddoes has fallen into a dangerous error in the treatment which he recommends for preventing the formation of catarrh, after exposure to its usual causes, after having been previously heated by exercise and artificial heat, &c. viz. to remain in an atmosphere of very little higher temperature, than that to which the patient has been exposed, with the view of preventing the formation of the disease.

The proximate cause of catarrh, is evidently an inflammation of the mucous membrane of the bronchiæ, the effect of which is an increased circulation of the blood in the vessels on the surface of the bronchiæ, and an increased secretion of mucus. When the membrane which lines the nostrils is affected in a similar manner, the disease is called coryza.—A certain degree of inflammation occasions a free discharge of mucus from the bronchiæ; while an increased inflammation of the surface of those parts not only suppresses secretion

there, but is followed by a sense of fullness of the lungs, uneasiness in respiration, and quickness of the pulse.*

TREATMENT.

The indications of cure in general, are to diminish the action of the heart and arteries, and to remove the irritation in the respiratory passages.

These intentions are most certainly accomplished by venesection proportioned to the state of pain and feverish heat; by the frequent exhibition of mild purgatives; by the gradual introduction of cool air; by the use of cold aqueous drinks, and by the observance of every other part of the antiphlogistic regimen, and the avoiding of acrid and indigestible substances;† and when the violence of the inflammatory symptoms, the pain in the head, heat and restlessness, and pain in the thorax from coughing have abated, the cure may be considerably

* Those who regard the preservation of their health and the vigour of whose frame is yet entire, should carefully avoid making effeminate indulgence necessary to their comfort; and by gradually training themselves to bear the impressions of cold, endeavour to induce that enviable state of hardiness, that will enable them to brave with impunity the vicissitudes of the atmosphere of our climate. This they will, in a great measure be able to accomplish, *by living in cool rooms—by accustoming themselves to regular exercise in the open air during the colder months, by habitual cold bathing, and by abstaining from the use of large quantities of warm enervating liquors.* Persons whose constitutions are delicate and readily susceptible of catarrh, should never remain inactive, either in the open air or in cool apartments long enough to induce an unpleasant sensation of cold or chilliness.

† Cheese, nuts, and every thing that stimulates the glottis and fauces in deglutition, or proves indigestible after being received into the stomach, should be carefully avoided, as they generally increase the cough.

facilitated by the exhibition of a small portion of an antimonial emetic, which may be taken in the following manner.

℞. Tart. emetic. (now called antimonium tartarisatum, of the London College), grs. ij.

Aquæ fontanæ cochliaria. magna. octo. vel ℥iv. misce.

Let the patient take one table spoonfull of the above every hour, with weak chamomile tea, gruel, or barley water, till it has some sensible operation either by vomit, stool or perspiration, and let him repeat the same every day or every second day towards evening, as circumstances may require, in the same manner, till the expectoration becomes free and easy.

One drachm of vinum antimoniale taken in the same manner, will answer equally well with the tartar emetic.

Mr. White in his popular essay on the disease termed "A. Cold," Philadelphia edition, published in 1808, says, the remedies (in the incipient stage of this disorder) which he can venture confidently to recommend, are frequent draughts of cold fluids, combined with nauseating doses of emetics—and adds that he had often seen a glass of cold water taken upon going into bed, warmed with a pan of coals, on which a little coarse sugar had been previously sprinkled, afford very evident relief.

If after the use of a nauseating solution of tartarised antimony in water, for a day or two, the skin continues dry, Mr. White advises the following saline draught to be joined with it.

℞. Sal. tartar. ℥i.

Succ. limon. recent. ℥ss.

Tinct. opii. gutt. x.

Mix the acid and alkali together, and as soon as the effervescence ceases, add the laudanum, and mix it with a draught of the weak emetic solution, which the patient is to take at a dose every five or six hours.

When the inflammatory symptoms are so great as to create a suspicion of their proceeding to a greater extent than is compatible with safety, blisters should be applied to each side of the thorax, or across the sternum without delay, and the remedies useful in pneumonia, employed.

Anodynes have been observed invariably to increase the restlessness, dyspnœa, and sense of distension in the head and thorax, while the feverish heat was high; but as soon as that has subsided, and the cough appears to be excited in consequence of the exquisite irritability of the excoriated membrane of the trachea and bronchiæ, they are perfectly safe, and in general afford more certain and speedy relief than any other remedy.

“Many writers appear not to have been aware that the bad effects produced by opium in inflammatory affections, are owing to its increasing the vis a tergo, or the propelling force of the heart and arteries.—When this has been sufficiently reduced by depleting and antiphlogistic remedies, and there is consequently little or no hardness or tension remaining in the pulse, opium may be employed to allay pain and irritation, and particularly that uneasiness and frequent coughing, occasioned by the stimulus of excreted mucus.”.... *A. P. Wilson.*

A plaster applied to the chest, composed of diachyl. cum. gum. with the addition of opium and powdered camphor, also contributes to ease the cough, by irritating and increasing the action of the vessels on the surface.

The pectoral decoction, almond emulsion, barley water, with gum arabic dissolved in it, and sweetened with sugar or syrup of capillare, lintseed, quince, or marsh mallows tea, lemonade, sago, oatmeal gruel, &c. all make suitable drinks, and after the inflammatory symptoms have subsided, and the expectoration has become free and copious, they should be taken moderately warm, but in the early stage of the disease, before the expectoration has become free and easy, they should always be taken cool, or rather quite cold.

Lemonade and other subacid drinks are also proper; for instead of increasing the cough by their acidity, they diminish it by their laxative and diuretic, and consequently sedative effect.

The following mucilaginous paregoric is singularly serviceable in cases of thin gleety expectoration, unaccompanied with fever.

℞. Elix. paregoric. ℥j.
 Vini. antimonii. ℥ss.
 Mucilag. gum. arab.
 Succ. glycyrrh. ānā. ℥ss.
 Aquæ fontanæ ℥viii. misce.

The common dose is a table spoonfull, to be taken with any agreeable tea or phthisan, every three or four hours, or as often as the symptoms may require. ℥j. of L. laudanum may be substituted in the above mixture for the paregoric elixir with advantage.

An electuary made by mixing the mucilage of gum arabic, loaf sugar, and fresh oil of almonds together, is also frequently found serviceable in allaying the irritation in the fauces and trachea in every stage of this complaint.

The inspissated juice of Spanish liquorice, an infusion of liquorice root and flaxseed, have also been frequently employed with apparent advantage for the same purpose. To allay a teasing cough, unaccompanied with pain or fever, the following may be prescribed.

℞. Ol. amygdal. recent. ℥ii.

Mucilag. gum arabic ℥ss.

Sacch. alba. ℥j.

Aquæ com. ℥ij. m. f. haust sumend. pro re nata.

After the removal of the inflammatory symptoms, the affected parts are left very irritable, which renders the patient liable to frequent relapses unless he is very particular in accommodating his clothing to the state of the weather, and to invigorate the whole system by going frequently abroad in the open air in dry weather.

Dr. Cullen in his *Materia Medica*, observes, that “catarrhal affections often depend upon an undue balance of the system, that is upon a languid perspiration necessarily producing a more copious determination to the lungs, and this by occasioning an increased secretion of mucus is attended with much coughing. In many persons this is habitual, or is readily renewed upon every slight application of cold. Whenever therefore, there is much coughing, and little fever, opium may be employed with safety and advantage.”

M. M. Art. Opium.

Dr. Darwin remarks, that “when the sanguiferous system is full of blood, the absorbents cannot act so powerfully, as the progress of their contents is opposed by the previous fullness of the blood vessels, whence stimulants in that case increase the action of the secerning system more than that of the absorbent one, but after copious evacuation this resistance to the

progress of the absorbed fluids is removed, and when stimulants are then applied they increase the action of the absorbent system more than that of the discerning one; hence opium given in the commencement of inflammatory diseases destroys the patient, but cures if given in very small doses at the end of such diseases." He accordingly directs after the blood-vessels have been sufficiently depleted, and the pulse gives the sensation of softness; six drops of tincture of opium, or one fourth of a grain of solid opium an hour or two before the usual exacerbation of the symptoms, which is generally towards evening.

OF THE INFLUENZA,

OR

EPIDEMIC CATARRH.

THIS disease does not occur in this country every year, or at regular periods, but after very irregular intervals and uncertain periods; and, from its occurrence at different seasons, and under very different states of temperature, it is not probable that the sensible qualities of the atmosphere have any share in its origin or generation, or much share in its propagation.

It appears from a collection of historical facts published in the third volume of the London Medical Transactions, that

the influenza occurred and spread over a great portion of the world in the years 1510, 1557, 1580, 1587, 1591, 1657, 1709, 1733, 1743, 1762, 1775 and 1782.

It appears from Mr. Webster's History of Epidemics, that the influenza was prevalent in America so early as the year 1647, and that it was again epidemic in New England, in the year 1655, and that in the year last mentioned it begun in the month of June.—(Vol. I. p. 189.)

Dr. Gilchrist, in his Observations on the Influenza, published in the third volume of the Physical and Literary Essays of Edinburgh, states, that it was prevalent at Edinburgh in the year 1729, and that it began in the winter. He says this disease increased the bills of mortality at London for some time, to about one thousand a week.—“The weather at that time was thick, warm and rainy.”

It again made its appearance at Edinburgh about the 17th of December, 1732, and continued to spread there till January, from which time it rapidly decreased, and ceased entirely by the end of the month.—“It had been previously epidemic in Saxony and Hanover, and other neighbouring countries in Germany in the month of November.”

“It appeared in London and Flanders, after the first week of January, 1733—In Paris, it appeared about the middle, and in Ireland about the end of January—At Leghorn, about the middle of February, and at Naples and Madrid, near the end of the same month.”

“It made its appearance in America about the middle of October 1733, and was first observed in New-England. It was soon afterwards observed in Barbadoes and Jamaica, and was

also reported to have made its appearance in Peru and Mexico, in South-America.”—(See *Edinburgh Medical Essays*, vol. ii.)

Dr. Ruty in his account of the weather and diseases of Dublin, relates that the influenza of 1732-3 appeared in Dublin towards the latter end of winter. That which occurred in 1737, made its first appearance in October, and that in 1743 in May; and that in the year last mentioned it was observed first at Rome, where it carried off great multitudes, as it did afterwards in Spain. It had been epidemic at London a month before it was observed in Dublin. The prevalence of this disease and its having spread over the chief part of Europe in the vernal season of 1743 is mentioned by Dr. Huxham in his *Observations on the Air and Diseases of Plymouth*. Dr. Whytt in a letter to Dr. Pringle mentions the prevalence of the influenza in Edinburgh and the South of Scotland in the year 1758.

There are no records of the occurrence of this disease in America that I have met with from 1733 till the year 1749, and I only have the account of its being epidemic or general at that time from tradition, having seen no printed account of it; nor is there any recollection by the ancient inhabitants of Philadelphia of its occurrence from the period last mentioned, until the year 1761; at which time, according to the report of the late Dr. Thomas Bond, it was traced from the West-India islands to Halifax, where it made its appearance in the spring, and from thence was conveyed to Massachusetts and the neighbouring states, and afterwards spread in a rapid manner over all the inhabited parts of North-America without being retarded in its progress by any changes in the sensible qualities of the atmosphere, or in the course of the winds till the month of July; from which time

it was no more heard of in this country till the year 1789; at least I have not been able to discover any printed documents of its existence within those periods.

Dr. Gilchrist observes that in the year 1762 the influenza spread regularly in England from South to North, and in Scotland was most general in the month of June, though spasmodic cases had been observed as early as April.

Dr. Monro in his Account of the Diseases in the British Hospitals in Germany, relates "that at Bremen after a very severe winter, the weather from being very cold became of a sudden extremely hot about the 10th of April 1762, and that a few days after many persons were seized with a very violent catarrhal disorder " accompanied with pains in the breast, head, limbs, and all over the body," and that a similar disorder was epidemical in most countries of Europe at the same time."

For the history of its appearance and progress in Europe in the year 1782 the reader is referred to the communications of Drs. Hamilton and Fothergill, published in volume second and third, of the Memoirs of the London Medical Society.

In the year 1789 it made its appearance in New-York early in September, and in Philadelphia the latter end of the same month; to the latter of which it was supposed to have been brought by some of the society of Friends, who came to attend their yearly meeting; soon after which it spread over all the southern states, and to the army in the Western Territory under the command of General Wayne. According to the reports of the public prints, the disease did not reach Boston for some time after it had become very general at New-York. Its first appearance in Jamaica

the year last mentioned was about the 20th of October, near a month after its appearance in Philadelphia, and according to the testimony of Drs. Chisholm and Read it did not appear at Grenada till November, and at St. Lucia till towards the close of December. See Duncan's Commentaries, vol. xvth and xviith, and Dixon Read's Diseases of the Army.

The disease again made its appearance in Philadelphia in the early part of the summer of 1793, but had nearly subsided when the yellow fever made its appearance the latter end of July and beginning of August. It did not spread very generally that year.

Towards the end of the year 1802 this disease made its appearance in different parts of Europe in succession. "In Paris it was epidemic or very general, some weeks before it made its appearance in London, and did not reach Manchester till the March following. It soon after proceeded to different parts of Scotland. The circumstances accompanying its introduction into Edinburgh and the manner in which it was propagated as related by Dr. Duncan of that city, carry irresistible evidence of its having been communicated by contagion, whatever circumstances first gave origin to it. The ninth volume of the London Medical and Physical Journal also contains some well attested facts and powerful arguments in support of the opinion that the influenza is a contagious disease.

The influenza became epidemic in the United States again in the year 1807.

It made its first appearance this time as it had done in the year 1789 in New-York, and existed there in 1807, two weeks at least before it was noticed in any other part of the United States.

It had made very little progress in Philadelphia on the 11th of August, at which time it appears, from Dr. Ricketson's account published in one of the New-York newspapers, that more than one half of the inhabitants of that city were then or had been lately affected by it.

It has been reported that it was epidemic at Halifax before it made its appearance at New-York ; the truth of this report, however, I have not hitherto been able to ascertain with certainty. But the bills of inquiry taken at the Lazaretto prove that it was epidemic in the Cape de Verd Islands, which are situated near the coast of Africa, and belong to the Portuguese, several weeks before it made its appearance in this country.*

It appeared at Princeton, New-Jersey, about fifty-eight miles south-west from New-York, on the post road to Philadelphia, about the same time that it appeared at Philadelphia, though but few cases occurred at Princeton till the 20th of the same month.—(See Philadelphia Museum, vol. V.)

I received information by letter from Dr. Smith, dated the 18th of August, that the influenza had but just begun to make its appearance at Wilmington, (Delaware), at that date ; and Wilmington is only twenty-eight miles from Philadelphia, in a southern direction.

Dr. Stearns states, that the first case of the influenza that occurred at Waterford, Saratoga county, in the state of New-York, was on the 7th of August ; and that it had been prevalent some days sooner at Albany, which is situated ten miles south of Waterford, on the west bank of the North, or Hudson's river, one hundred and sixty miles to the north of

* Dr. Dancer, in his Jamaica Practice of Physic, mentions its appearance in Jamaica in 1807, but has omitted to mention the date of its appearance there.

the city of New-York, from whence it was introduced into Waterford by persons who had been attending the courts at Albany. Mr. James, who was the first person attacked with the disease, had taken lodgings in a family consisting of fifteen persons ; some of these occupied stores in different parts of the village. Excepting those who had taken the disease at Albany, the members of this family were the first affected. "If the cause of this disease had been wafted by the winds; it is highly reasonable to suppose that it would have been simultaneous in different parts of the village, and not have commenced with a single family, and that in a public house in the northern part of the village, instead of beginning in some of the families in the southern part, as it was more in the direction of the wind, which prevailed at that time, and which had proceeded in that direction for a considerable time before the disease made its appearance in that place."

According to Dr. Spalding's account annexed to his bill of mortality for the city of Portsmouth, (New-Hampshire), it did not make its appearance in that city till about the middle of August, and it did not disappear till the middle of December, which is the season when common catarrhs are most prevalent.

The editors of the New-York Medical Repository, in the second number of the fifth volume, and second hexade, mention that a correct observer, who left New-York for the Province of Maine, on the 20th of August, found on his arrival at Newport (R. I.) that the influenza had just begun to make some progress there, and that the people of Boston had begun to complain of it, but that it had not made its appearance at Kennebeck at the time of his arrival there on the 30th of August, though it was observed there a few days later.

It is stated in the **Fifth Volume** of the **Philadelphia Medical Museum**, that it made its appearance in **Rockingham county, Virginia**, about two hundred and sixty miles in a southern direction from **Philadelphia**, about the 8th of September. At **Edenton, North Carolina**, the latter end of September, and that it did not entirely disappear there till the end of the year.

Dr. Cravens, the partner of **Dr. Peachy Harrison**, and **Mr. B. Smith** returned from a journey to **Tyger's Valley**, about a hundred miles distant from **Harrisonburgh**, the county town of **Rockingham**, on the evening of the fifth of September. On the 8th, **Dr. Cravens** was attacked with the influenza, and **Mr. Smith** the following evening. They had seen no person with it on their journey that they knew of, nor after their return, though it was at that time prevalent at **New Market**, about eighteen miles from **Harrisonburgh**.

No other person was affected with the disease in either the village of **Harrisonburgh** or the surrounding country till the 11th, when **Dr. Harrison**, who had visited both of the gentlemen before mentioned, was attacked with the same disease. But in a few days the cases multiplied so fast, that the **Doctor** could not trace their source any farther.

It is related in the **Fifth Volume** of the **Medical Repository**, (hexade second) that the members of congress from **Georgia** and **South Carolina** did not meet with the influenza on their journey, till they arrived at **Raleigh** in **North Carolina**, (which is about four hundred and fifty miles in a south-west direction from **Philadelphia**,) about the 17th or 18th of **October**, though it appears from a letter which I received from **Dr. Harris** of **Charleston**, that it made its appearance in that

city the beginning of **October**, at the same time that the yellow fever was prevalent there.

Dr. Kollock of **Savanna**, in a letter dated **March 7th, 1808**, informs me that it was not observed in that place till about the 26th of **October**; and adds that "though none died of it in that town, many died of it in the interior parts of the state, where in some instances it swept off whole families."

The members of congress from **Tennessee** first observed it at **Staunton**, about the same time as the others did at **Raleigh**. Several gentlemen from **Kentucky** were at the **Hot Springs** on the 16th of **October**, at which time the inhabitants were free from it. One from **Chilicothe** in the state of **Ohio**, observed it at **Hockhocking** on the 12th of **October**. Some of those gentlemen suffered from the distemper on their journey, while others were not affected by it till after their arrival at the seat of government.

It did not make its appearance in **Warren county**, state of **Kentucky**, till the last week of **November**, according to **Mr. Sharp's** letter published in the **Medical Museum**, Vol. 5th, page 113.

Though the influenza had spread rapidly in **Philadelphia**, from the 12th of **August**, no person within the inclosure of the **Lazaretto**, which is only twelve miles in a southern direction from **Philadelphia**, was attacked by it till the 20th of the same month, and then it first attacked the quarantine master, captain **Egger**, two days after the arrival of a pilot by the name of **Robison** from **Newcastle**, who was ill with it at the time of his arrival at the **Lazaretto**. Soon after the attack of captain **Egger**, almost every person belonging to the **Lazaretto**, became affected with the same disease. This informa-

tion I received from the late Dr. Buchanan, who was at that time physician of that institution.

On the 20th of August, Mrs. A. while indisposed with the influenza, went from the city to see her sick child at Mrs. Weis's on the Germantown road about five miles from Philadelphia, at which time every person in the house was in perfect health, excepting Mrs. A.'s infant child, and that had a different complaint. On the 23d Mrs. A.'s mother, who had been a considerable time from the city, was attacked with the influenza, and on the 24th the woman that nursed the sick child, and on the 25th a lady who resided in the country near Mrs. Weis's, and who had not been in the city for more than a month, but who had set in the same chamber with Mrs. A. for some time on the day of her visit to the child. They all three had the disease in a very violent manner.

Mrs. Weis's family which had no intercourse, or access to that part of the house which was occupied by the sick child and the persons already mentioned, escaped the disease for several weeks, as I have since been informed by Mrs. Weis.

It is true the disease had made its appearance in different parts of the country, before Mrs. A. visited her child at Mrs. Weis's, most of whom upon inquiry I found had been into the city to market or on some other business; but I am certain that the persons who took the disease at Mrs. Weis's after Mrs. A.'s visit, had had no intercourse with any other person with that disease, for I attended them during their illness and made the most careful inquiry respecting it.

This disease made rapid progress in Philadelphia, after its first appearance, came to its height about the beginning of September, declined rapidly soon after the middle of that

month, and was entirely extinguished before the end of October.

The number of deaths by it in Philadelphia, the Northern Liberties, and the district of Southwark, reported to the health officers, was only thirty: Of which number three were under two years of age, six between fifty and sixty; four between seventy and eighty; and three between eighty and ninety.*

* According to Dr. Ramsay's account of the influenza in his History of South Carolina, volume second, page 90, one half of the inhabitants of Charleston, amounting to about fourteen thousand persons, were attacked by the influenza in the autumn of 1807, of whom forty-five including thirty-two negroes died. He asserts that it originated in New-York; and spread from that center in all directions. "It reached Canada in October, and extended to the western and southern states, and even to Havanna, in the course of three months." Its rise and progress is ascribed by Dr. Ramsay to some morbid constitution of the air. He also entertains the same opinion relative to the origin of the yellow fever, though the one spreads rapidly over every inhabited part of the country, while the other is chiefly confined to the limits of a city or seaport town.

Dr. Ramsay has certainly been misinformed, or labours under some extraordinary prejudice with respect to the mortality by the yellow fever in Charleston in different years, and with respect to the exemption of the natives from the disease, unless they all desert the city, on the first report of its existence. He is also extremely inconsistent in ascribing a wide spreading disease, and one confined within specific limits to the same cause. That such errors in point of fact, and such inconsistent opinions, should be delivered by a historian of Dr. Ramsay's talents and acquirements, can only be accounted for from a presumption that he has not had a sufficient number of favourable opportunities of observing the rise and progress of those diseases himself, but has been imposed on by the reports of certain visionary theorists, or by a description of men, whose aim is to promote their own selfish and unworthy views at the expense of the public safety.

They who oppose arguments and conjectures to well authenticated facts and observations, however they may satisfy unreflecting credulity, can only expect to meet with the sneer of contempt from those conversant with the law of evidence and the rules of fair and correct reasoning.

In the course of the seventeenth century, when the plague so frequently visited England, the influenza only occurred once, viz. in the year 1657, whereas it has visited that country seven or eight times since the last appearance of the plague there.

Notwithstanding the authenticity of this fact, Mr. Webster in his history of epidemics gravely asserts that the influenza and the measles are the usual precursors of the plague.

Several eminent physicians are of opinion that the influenza is propagated over large portions of the globe by certain miasmata, or noxious particles contained in the air.

The numbers attacked by this disorder at the same time, and the extensive sphere of its activity, are circumstances which seem to favour this opinion. But when we consider the confined operation of the atmosphere, in conveying infectious or noxious particles, and how soon they are dissipated, or rendered inert by diffusion in, or admixture with, the atmosphere, it renders the opinion extremely equivocal; and what renders it more so, is the successive manner in which it proceeded from one place to another and particularly from the length of time that elapsed between its appearance at New-York, in the year 1789 and 1807, and several of the cities and towns to the northward, westward, and southward; a circumstance which, in my opinion, affords sufficient evidence that the disease, however it originates, is propagated by contagion, but of a nature more active in its operation, and more extensively diffused, than is observable in any other contagious disease at present known.

If its cause had existed in the atmosphere to any extent, or had been occasioned by any morbid constitution thereof, all the inhabitants in the same latitude, or at least in the direction of the prevailing winds would have been affected at the same time, or within a very few days of each other, allowing for difference of constitution and the time it takes for the wind to pass from one place to another; but as this was not the case, and the disease appeared successively in different cities and towns in different directions, its appearance can only be accounted for by the doctrine of contagion: for a disease derived from so general and extensive a cause as the contamination of a large portion of the atmosphere must necessarily have produced corresponding effects.

A long continuance of warm, calm and misty weather preceded the appearance of the influenza in Philadelphia in the year 1789, whereas the season previous to and during its prevalence in 1807 was much more rainy and cooler than it had been known at the same season for several years.

AN ACCOUNT OF THE SYMPTOMS OF THE INFLUENZA AS IT APPEARED IN PHILADELPHIA IN THE YEAR 1807.

In general, symptoms of catarrh and coryza preceded the fever.

Many complained of a sensation of soreness within the thorax, and pain on coughing, especially in the frontal sinuses or in the eye balls. In these cases the pulse was always frequent, and generally hard or tense, and the skin dry, except during the act of coughing. The eyes were also frequently

red and inflamed, as well as watery and painful; and with some the disease appeared to be confined to the eyes only, to the exclusion of the other symptoms. In some the pains of the loins and limbs were extremely acute, accompanied with great lassitude, or a feeling, resembling very great fatigue from too much exertion.

When the local affection was accompanied with acute pain or stitches in the thorax or side, the cough was distressing, and almost incessant, and the expectorated matter scanty, white and tough.

When the inflammation was more superficial and mild, the expectoration was more copious and free, and the cough less frequent or distressing.

In affections of the mucous membrane of the nares, fauces and bronchiæ, a superficial inflammation of their surface occasions a copious secretion of mucus, whereas when the inflammation affects their deeper seated vessels, no mucus is secreted till that high state of inflammation subsides, or is considerably diminished. The same effect is observable in every other secreting surface.

With several old people the disease commenced with symptoms of lethargy and prostration of strength, which no remedies that were tried could relieve.

In several pregnant women, the disease resembled the pleurisy, and was relieved by the same remedies as are most efficacious in that disease.

In many persons the disease assumed the appearance of the rheumatism, and in persons accustomed to the gout it produ-

ced gouty symptoms. Several persons exposed in thin clothing, to the sudden changes of temperature, which occurred during the prevalence of the disease, and particularly immediately after their recovery from the influenza, were attacked with a renewal of catarrh, and some under similar circumstances were attacked with the dysentery, by which they suffered very severely.

All old strains and chronic diseases were aggravated by it, and many fell victims to phthisis pulmonalis, in consequence of its effects upon the lungs, who had been predisposed to that relentless foe to life.

In general, though it spread more readily and rapidly among the tenants of the nursery when introduced into a family, children were affected much more mildly by it than adults, and women than men, those in a state of pregnancy excepted.

TREATMENT.

This disease required blood letting, and other depleting remedies, and the antiphlogistic or cooling regimen to be employed with more or less strictness and attention, in proportion to the greater or less degree or violence of the existing inflammation and fever. Small and repeated doses of nitre and tartar emetic or antimonial wine, were usefully employed, during the intervals from purging.

As soon as the pain and fever were subdued, a few drops of laudanum and antimonial wine in a mucilaginous draught, taken three or four times a day, or a pill containing one sixth or one fourth of a grain of opium, and one grain or one and a half of pulv. ipecacuanha, or one fourth of a grain

of emetic tartar, at the same stated periods, followed by a decoction of barley, liquorice root, and white sugar, or any agreeable mucilaginous tea or infusion; observing to increase the quantity of the opiate at bed time, and to favour mild perspiration, by occasionally bathing the feet in warm water. If the pain or uneasiness should return in the thorax or head, local bleeding should be advised, and a blister applied to the part most affected. Recourse should be had at the same time to small and repeated doses of antimonials. But when bleeding and purging were employed early in such cases as required it, and the antiphlogistic regimen strictly observed, I seldom found the application of blisters necessary.

Many indeed had the disease so mildly, that they had no occasion for any remedy, but pursued their usual occupations without much inconvenience.

Nauseating doses of antimonials, served to subdue the inflammation and fever in mild cases, after a purge, or a few doses of common sulphur mixed with honey, simple syrup, or milk and sugar, without the aid of bleeding, but when the pain in the chest was acute, the skin hot, tongue white, and the pulse frequent and tense, bleeding could not be omitted with impunity.

Besides the mucilaginous anodyne mixture already mentioned, many took with advantage to allay the cough, a mixture of oil of sweet almonds, mucilage of gum arabic, and syrup of violets, or a sufficient quantity of loaf sugar, while others preferred a syrup made of lemon juice, sweet oil, and sugar candy, &c.

The preceding account of the symptoms and treatment of the influenza, is taken from the cases and memoranda which I

had inserted in my note book during the continuance of the disease in Philadelphia in the year 1807. The rest of the facts and observations, were collected and noted at different times previous to that period. How far they are worth the trouble I have been at in collecting them, or merit the attention of others, must be left to the decision of less partial and more competent judges.

OF THE DYSENTERY,

OR

BLOODY FLUX.

THE diagnostic symptoms of this disease are, an urgent desire to go to stool, generally without the ability of discharging any thing from the intestines except a little bloody mucus, which is frequently mixed with froth or air bubbles. This disease is always accompanied with more or less fever, and griping or spasmodic affection of the intestines.

The patient is also generally sick at stomach in consequence of the griping which precedes every effort to evacuate the intestines.

The disease is generally preceded by costiveness, flatulency and loss of appetite; and usually begins with alternate sen-

sations of cold and heat, debility in the animal functions and other symptoms of fever.

The stools at first are commonly copious and excrementitious, but the next day or soon after, they become small in quantity and of a frothy appearance, and are attended with griping and tenesmus.

From this time till the disease takes a favourable change, natural fæces are seldom evacuated except during the operation of a purge, and then they are generally in small hardened lumps called scybala.

When a cathartic has this effect, the griping is sensibly relieved, the stools are fewer and the tenesmus less painful or distressing.

Besides the mucus in the stools, there is generally a watery humour resembling serum, which is perhaps one cause of the irritation, and descends from the higher parts of the intestines, whilst the mucus is chiefly secreted from the rectum in consequence of great straining.

Balls of hardened fæces may come away at any time of the disease, but are most common in its advanced stage, especially when purging has been neglected; and it is common to see tenesmus and all the other symptoms give way after their discharge.

The stools are alone distinguished by a peculiar smell different from that of common excrements; it is faint and not rank at first, but towards the end, in fatal cases, when the intestines begin to mortify the fætor is cadaverous and intolerably disagreeable.

The air which abounds at this time in the first passages, often occasions a sense of oppression or increase of the griping according to the place where it is collected, whether in the stomach or in the smaller or larger intestines, and in proportion to the spasms which imprison it. In general, the irritation of the stomach and higher intestines is attended with more sickness than griping, and therefore when the griping is most acute without sickness, it is probable that the spasm is lower down, and when the chief pain is felt towards the os sacrum, we may then suspect that the upper part of the rectum is affected; but when the lower extremity of the rectum is irritated, the spasm seems not then to be so much productive of pain as of a violent effort to relieve itself of the irritation, drawing into consent, the muscles of that part as well as others, which act in discharging the fæces. The evacuation of the fæces is always preceded by severe griping, and succeeded by some respite; but the motions being so frequent, the patient can have no considerable ease till the irritating cause be removed, and the morbid sensibility diminished. But when the bowels sphacelate, which is the general issue, when the disease terminates fatally within the period of fourteen or fifteen days, the patients, though restless, complain of little pain or tenesmus; some remaining free from those symptoms not only for some hours, but sometimes for two days before death. At such times they have some degree of delirium though some retain their senses to the last.

Dissections shew that the principal seat of this disease is in the colon and rectum, the internal coat of which, is always more or less inflamed. Hence the morbid appearances, observed by Morgagni, Pringle, Blane and others, are, in those who die in the acute form of the disease, gangrene, and in chronic or protracted cases, ulcerations with contractions and thickening of the coats of the intestines, with enlargements of

their glands, which appear knotty and protuberant. The peritoneum also sometimes partakes of the inflammation of the internal parts.

The tenesmus generally continues for sometime after the griping has ceased, owing to the excoriated state and increased sensibility of the rectum.

Procidencia ani, and strangury, frequently occur in this disease, the former from violent straining, and the latter from the inflammation spreading to the neck of the bladder.

The duration and issue of this disease are uncertain. With proper remedies and regimen early applied, the disease generally terminates favourably; but from mismanagement or neglect, it is frequently fatal.

When debility increases daily, with a remarkable alteration of the countenance; when the pulse becomes low, small and intermitting, and the patient is very restless and sighs frequently, without complaining of griping: when his eyes have a vacant expression and dim appearance, his mouth and throat affected with aphthæ, and the stools come away without his knowledge, and are of a cadaverous smell, his life is nearly at a close and his recovery hopeless.

A short time before the patient expires, he feels perfectly free from pain, and though as cold as marble, he flatters himself that he is better.

When this disease terminates fatally, the dissections of numerous practitioners prove that the inflammation has terminated in sphacelus.

Among others, that very sagacious and accurate observer **Dr. Cleghorn**, has recorded that “upon opening the bodies of the dead, he constantly found the great guts either entirely mortified, or partly inflamed, and partly mortified; the rectum being generally most affected. In some cases the small guts appeared to be perfectly sound in appearance, but more frequently their lower parts were inflamed.” Hence it is not surprising that death should be preceded by symptoms of mortification.

When it terminates fatally, it is frequently in seven or eight days; but more frequently about the eleventh or twelfth, and seldom after the sixteenth. When the disease continues longer than sixteen days, the intestines become ulcerated or schirrous, and it becomes a local chronic affection, which sometimes continues in the form of tenesmus and lenteria for years. A case of this kind is related by **Dr. Lind**, in his paper on infection, page 220.

OF THE CAUSES OF DYSENTERY.

Many authors of eminence in the medical profession, are of opinion that the dysentery is occasioned by the same remote or occasional causes as intermittent fevers in conjunction with the application of cold to the surface of the body. In support of this opinion they appeal to the circumstance of both diseases occurring in similar situations, and becoming epidemic about the same season of the year; and from the examples mentioned by **sir John Pringle** of a number of soldiers, who, after having been encamped on marshy ground, were compelled to lie all night in wet clothes without shelter after a fatiguing march; some of whom were soon after attacked with the

dysentery, some with an intermittent, and others with symptoms which appeared to partake of both.

But to these facts there are many exceptions, as may be seen in Van Swieten's Commentaries, and several later authors.

In the first place, the circumstances respecting the state of the weather, or temperature and changes of the air, which give rise to intermittents, are the reverse of those in which the dysentery makes its appearance. The chief circumstances, which in low and level situations are most favourable for the production of intermittents, are a long continuance of wet weather, succeeded by drought and great heat. Whereas, the dysentery never becomes epidemic but when a long course of hot and dry weather is suddenly succeeded by cold and wet.

The disease appears also to be occasioned by different causes from the fever which occurs in low, flat and moist grounds, as the dysentery frequently prevails in elevated situations out of the neighbourhood of marshes, particularly in the month of August, when the dews are heaviest.

The different treatment which these diseases require, as well as the contagious nature of the dysentery, under particular circumstances, afford irresistible objections to the opinion of their being the same in kind, and only differing in degree, and consequently to their being derived from the same remote causes.

Sydenham, supposing every species of disease that became epidemic, to depend upon some peculiar noxious constitution or condition of the atmosphere, independent of changes in its sensible qualities, has taken no notice of the weather that

preceded the dysentery, which was epidemic in London in the summer and autumn of 1670, but Willis says the summer preceding its appearance was remarkably hot.

Sir John Pringle relates that, in the year 1762, the summer heats and droughts were of longer continuance than he had remembered to have seen them in England; and that in the autumn of that year, more cases of dysentery occurred in the city of London, than in all the preceding sixteen years that he had resided there.—(Diseases of the Army, seventh edition.)

Though I had opportunities of seeing this disease epidemic in the month of September, in the year 1776, among the American troops on Long Island, and afterwards at Amboy, during the very rainy weather which succeeded a hot and dry summer. None of the nurses or attendants of the sick in the regimental hospitals took the disease.

In other situations and circumstances however, I have no doubt from the testimony of Degner, Lind, Sir John Pringle, Blane, and many other attentive observers, that the disease is contagious in confined situations, where ventilation is excluded and cleanliness neglected. Degner in particular, has given the most convincing reason to believe, that the dysentery which prevailed with dreadful and almost unexampled mortality at Nimeguen in the year 1732, originated from one infected person brought into that town from some distant place. At this time there was nothing remarkable in the state or temperature of the season, and none of the neighbouring towns suffered, except by their communication with the infected place. When the question relates to a remote and external cause, it is to be understood that however prevalent and powerful it may be, it is not sufficient at all times to pro-

duce an effect without the concurrence of a predisposing, and sometimes of an additional exciting cause. Some causes however, as the contagion of the small-pox and measles, operate both as a predisposing and occasional cause, without the concurrence of any other.

“In the camp, the contagion passes from one who is ill to his companions in the same tent, and from thence perhaps to the next.—The foul straw becomes infectious. But the greater sources of infection are the privies, after they have received the dysenteric excrements of those who first sicken. The hospitals likewise spread it, since those who are admitted with the flux not only give it to the rest of the patients, but to the nurses and other attendants of the sick.

“In general, the contagion does not suddenly spread; for whole towns and camps are never seized at once from the impurity of the atmosphere; but the infection is carried from one to another by the effluvia, cloths or bedding, &c. of infected persons, as in the case of the plague, small-pox and measles. Yet the dysenteric miasma is of a less infectious nature than any of those; so that in the milder epidemics it may pass unnoticed as in those described by Sydenham and Willis.”

After a patient investigation of the question relative to the contagious nature of the dysentery, and comparing the observations of all the most approved authors, and examined the situations and circumstances in which the disease has been supposed to have been propagated by contagion, I am convinced that like the typhus fever, it is only contagious in situations where the air is confined and cleanliness neglected. In open situations where the air is free and pure, and cleanliness preserved, there is scarcely a well attested instance of its being communicated from one person to another.

That the disease sometimes supervenes after a person has been exposed to marsh miasmata, or to febrile contagion, there are many examples on record, and in the latter case, that it is accompanied with the symptoms of malignant fever; but that it is rendered contagious by such combination as taught in a late publication by **Dr. Harty**, is by no means confirmed by my observations, but the contrary.

It is true, the typhus with which the dysentery is sometimes combined may be propagated, but the dysenteric symptoms will not accompany it, unless the patient is exposed to the operation of cold and wet, for a certain time after he has received the infection of typhus.

The excrements or effluvia of dysenteric patients in confined, unventilated and foul situations, when volatilized by heat, certainly sometimes produce the same specific disease in those who visit the patients; but like the contagion of the yellow fever and of the typhus, the excretions or effluvia of the sick become divested of their noxious quality when exposed to and diffused in pure and open air.

There are many cases described by authors, of patients labouring under dysentery and typhus fever, as well as of pleurisy and malignant fever at the same time in military and naval hospitals; and of patients with the pleurisy being brought into hospitals where the typhus existed at the time, who became affected with the typhus soon after the decline of the inflammatory symptoms. And in the Southern States of this country, nothing is more common than to meet with patients with symptoms characteristic of the existence of dysentery and bilious fever at the same time, produced by the joint effects of marsh miasmata, and sudden vicissitudes of temperature.

TREATMENT.

Not trusting to the fallacious indications afforded by the symptoms, I shall offer the result of my own experience, and the observations of those who have been most conversant with this disease.

For the purpose of proceeding with regularity, I shall distinguish the dysentery into three states, viz.

- 1st. When the disease is recent and the sick can easily bear evacuations.
- 2d. When the disease is accompanied with violent and distressing symptoms, or has continued long, and has greatly impaired the strength, inflamed the intestines, and brought on a hectic fever; and
- 3d. When the patient is prevented from recovering by the continuance of a tenesmus, or some other remains of the disease, or becomes subject to frequent returns of a diarrhœa, from the weakness and morbid sensibility of his bowels.

As there is always more or less inflammation of the mucous membrane or villous coat of the intestines in the early or recent state of this disease, similar to that which occurs in the bronchia in catarrh, blood-letting in the generality of cases, is an indispensable remedy. In regulating the quantity and repetition of this remedy however, the pulse, as in cases of enteritis, is a very uncertain guide; for in both diseases it is generally small and low; and when sickness at stomach accompanies the disease, it generally appears soft and weak also. But very acute, and frequent griping and pain in the abdomen, previous to and during every evacuation, accompanied with painful tenesmus, are signals for the employment and repetition of

this remedy. While these continue with severity, blood-letting should be repeated to the quantity of ten or twelve ounces, and in cases of greater violence, in much larger quantity once in six or eight hours, till a manifest abatement of the local pain and distress is procured.

In conjunction with blood-letting, a full dose of any of the common purging salts, with the addition of one fourth or one half of a grain of tartarized antimony, should be administered soon after the first bleeding, and the fourth of a full dose every four hours after, with the addition of a fourth or sixth part of a grain of emetic tartar to each dose, till the fixed pain is removed, and more copious and natural stools are procured.

Fomentations of warm water to the abdomen and legs, also contribute to mitigate the pain and fever in the early stage of the disease. Where they fail, and especially if the blood drawn on the second or third time of bleeding shows a sizzly surface, or firm cohesion of the crassamentum, a large blister applied to the abdomen, and one to the inside of each leg, seldom fail of affording the most sensible relief—and more especially if preceded by topical bleeding, by means of leeches or cupping glasses. To prevent a return of those symptoms however, free evacuations must be continued daily from the bowels by means of mild purgatives, particularly by castor oil given in half ounce doses once in three or four hours, mixed with any thing agreeable, that is of a mild nature, the patient making use of acidulated drinks and the antiphlogistic regimen at the same time, and carefully abstaining from opiates till the acuteness of the griping and inflammatory symptoms have been completely subdued; after which if the tenesmus continues (which in consequence of the abrasion of the rectum is generally the case) opiates are not only

safe but highly beneficial, and particularly when administered in mucilaginous injections.

When the disease does not yield to these remedies, but the griping and tenesmus continue stationary or return soon after they have been considerably mitigated, there is reason to suppose they are occasioned by the retention of scybala or indurated excrements in the colon. In such cases the remedy in which Sir John Pringle placed most reliance, was five grains of calomel combined with thirty grains of rhubarb, which in ordinary constitutions he says, is a moderate or rather a small dose. This combination he adds, renders the rhubarb milder in its operation (p. 263—edition 7th.) This is confirmed by Dr. Richter in his *Medical and Chirurgical Observations*, published at Goettingen in 1793, who affirms that no purgative operates so powerfully and at the same time so gently as calomel. In such circumstances I have frequently prescribed six grains of calomel and two of opium at bed time, with the most decided success. The opium lulling the pain, while the calomel usually occasions a free evacuation next morning.

Clysters of lintseed tea, a solution of gum in water, thin starch and olive oil, are generally employed for the purpose of mitigating pain; but as long as the inflammation of the intestines continues they generally add to the torment, unless when administered cool—and when the tenesmus is urgent I have generally found them come away immediately, and this distressing symptom increased by the attempt to administer them, owing to the irritation which they occasion, even in the smallest quantity.

Under these circumstances therefore, and especially in the second stage when the strength daily declines and the fever continues with dry skin, parched tongue, and frequent ineffectual

efforts to evacuate the fæces, several of the most experienced writers recommend purgatives, combined with opiates, and of these Dr. Clark in his *Observations on Diseases of Long Voyages*, gives the preference to a combination of calomel and opium, in the proportion of from three to five grains of the former to two of the latter, which he directs to be taken every four hours till they occasion a slight salivation or tenderness of the gums. As soon as this is obtained, he asserts that the griping and tenesmus both subside; and observes, that from twenty to thirty grains given in this manner, generally have a sensible effect on the mouth, though he has sometimes met with cases which required more than a drachm. When this remedy does not also operate as a cathartic he interposes a saline purgative occasionally to carry off the indurated acrid corrupt humours from the intestines. It is true, Dr. Clark employed calomel and opium in every stage and under all circumstances of the disease, but the event of several of the cases which he has recorded, by no means confirms the propriety of this indiscriminate and empirical practice. The cases recorded by Drs. Yates and McLean, in a publication intitled the *Science of Life*, afford ample proof that so long as the acute pain and fever denote the presence of inflammation of the mucous membrane of the intestines, the free use of mercury combined with opium is highly pernicious;* as an example of this

* Mr. Hooper in his account of the sick, landed at Plymouth from Corunna, after the campaign in Spain in the year 1808, states, that though he salivated men under different circumstances, labouring under the dysentery, it was of no avail.

He had no better success from *saccharum saturni*, given in doses of five grains once in five hours, made into pills with *confectio aromatic*—and afterwards in doses of three grains combined with opium grs. iss.—Two grains of opium alone, given every two hours, had no better effect. He then increased the quantity of opium gradually to six grains, which he gave regularly every four hours for three days, without any perceptible benefit

I have transcribed the history of the following case from Yates and M'Lean's practice.

On the first of September, a patient in the early stage of the dysentery, with symptoms of great severity, took two grains of calomel and as much opium every two hours. This was continued for two days—on the third day, the dose was given every hour; beside which he had half an ounce of mercurial ointment with 3j. of calomel rubbed into his body. Next day the pills were continued, and the quantity of ointment tripled, by three rubbings in.—This was continued for three days, at which time an eruption on the skin appearing, it was feared he could not be salivated; this eruption being a sign that no salivation could be produced. The same mode of treatment however, was persisted in. September 7th, the calomel in the pills was augmented to four grains; the warm bath was used, and the ointment with four drachms of calomel applied.—Next day though his pulse was almost imperceptible and his extremities cold, “the medicines were continued as far as circumstances would admit;” with what view it is not said, nor indeed is it easy to be discovered. At one in the morning, the patient died: an event, under such treatment, not at all surprising. Our authors excuse themselves for this failure, by saying the viscera were diseased, as was evinced by the impossibility of exciting a salivation, and that when a patient is evidently incurable by common practice, it becomes the duty of a practitioner to depart from it.—No doubt we may readily assent to both these assertions; but though a patient be evidently incurable by the usual practice, or by any other, there is no necessity for killing him, or for persevering in a course of violent medicines, which evidently make him worse.

The following table exhibits the symptoms of the disease, as they kept pace with the medicines taken :—

<i>Days of the Month.</i>	<i>Medicines taken.</i>	<i>Symptoms.</i>
August 29th,	Ordinary doses of mercury and opium.	Pain of bowels and frequent stools, growing worse.
3 rd Sept. 1 st & 2 ^d .	Opium and mercury, two grains each every two hours, beside opiate draughts.	Still increasing.
3 ^d .	The opium and mercury as before, but now given every hour; half an ounce of mercurial ointment with grs. 60 of calomel.	Stools very frequent, with violent pain in the bowels, extreme thirst, tongue furred, and no sleep.
4 th .	Pills as usual.—Ointment thrice rubbed in with 120 grs. mercury.	Vomiting during the night, tongue brown and furred.
5 th .	Medicines as before.	Violent pain in the bowels.
6 th .	Medicines as before.	Extreme pain on pressing the arch of the colon, frequent stools, profuse sweats, great dejection of spirits.
7 th .	Pills as before, with 4 grs. of calomel. Mercury in the ointment increased to oz. ss. Warm bath. At night oz. j. of mercurial ointment, with oz. ij. of calomel.	As yesterday. An eruption on the skin. At night incessant stools, with violent pain in the belly, profuse sweats.
8 th .	Pills. Ointment and calomel as before. Warm bath thrice. At night oz. ij. of ointment, with oz. iv. of calomel.	Incessant stools with violent pain, at night with blood. Extreme debility.
9 th .	Medicines of the same kind, as many as could be taken.	Stools innumerable, extremities cold, pulse scarce to be felt.
10 th .		Death at one in the morning.

“In the year 1735, the dysentery prevailed at Edinburgh, in the months of October, November and December, with very violent symptoms, but was mortal only to a few.

“Some physicians at that time, after bleeding and vomiting gave their patients small doses of aquilla alba (calomel) once a day till their breath began to be tainted, the purging being mitigated at the same time by glutinous food and drink, and anodyne clysters, which were the more necessary as the intestines were easily irritated, so that ten grains of rhubarb scarcely durst be given.” *Med. Essays & Observ. Vol. 5 p. 29.*

Many physicians in this country employ mercury in small and repeated doses, in the early stage of violent cases of the dysentery, for the purpose of inducing salivation. In this way I have seldom observed it to succeed, but on the contrary have several times seen fatal effects result from this practice. This might be expected from the almost invariable effects produced by mercury. In the interval between its first administration and its affecting the gums, its stimulating power is felt in a quickened circulation, and often in feverish heats. Hence in the early and inflammatory stage of dysentery, calomel ought never to be employed for the purpose of salivating—but in protracted cases, when the local and general excitement are moderate, its stimulating effects may be in a great measure counteracted by the effects of opium; and when in such circumstances it is pushed so far as to affect the gums, the disease of the bowels is generally suspended.

In some cases, ulceration of the tonsils has been occasioned by mercury, which has terminated in sphacelus and a speedy death; in others, the tormina of the bowels have been rendered insupportable, and the inflammation converted into sphacelus.—But, according to my experience in protracted cases, the practice of giving small doses of calomel and opium in conjunction, every three or four hours, till its effects on the mouth are evident, are not only safe, but frequently successful. The best anodyne is a combination of from half a grain to two grains and a half of opium, with from twenty to thirty of Dover's powder, or the compound powder of ipecacuanha, followed by a cup of warm tea, made of hyson, chamomile, or sage, every half hour for three hours, or till a copious perspiration follows. Calomel given in this manner, operates as a mild and effectual laxative; while the opium combined with the ipecacuanha or neutral salt, not only eases the pain but promotes perspiration, and thereby acts in reducing the inflam-

mation of the internal surface of the intestines, on which I believe all the symptoms depend.

A flannel roller or bandage round the abdomen, has lately been highly recommended by several physicians who have practised in hot climates in every stage of the dysentery, particularly by Drs. White and Dewar.

In the East Indies, Dr. Wade gave a dose of calomel every night, and a saline purgative the following morning, till the disease gave way, and assures us that this treatment generally succeeded.

When the dysentery continues till the strength is much impaired and the pulse sinks while the hectic heats continue, great danger is to be apprehended; but so long as there are neither involuntary stools, nor apthæ, nor hiccup, the case is not entirely hopeless. Under these circumstances, decoctions of cortex and serpentaria, or of columbo root, with from five to fifteen drops of laudanum, more or less, according to the degree of violence of the griping and pain, in a draught of cretaceous julep once in three or four hours, with vinous and cordial aliment, in a liquid form, and particularly wine whey, are the articles from whence most benefit has been obtained.

But when the patient has involuntary stools, apthæ and hiccup, accompanied with great prostration of strength and oppression at the præcordia, the case is desperate, and scarcely admits of palliatives.

In the chronic state of the dysentery, an alterative course of mercury guarded from occasioning debilitating evacuations, the frequent use of the hot bath, a flannel under dress, and a tight flannel roller round the bowels, or when that does not succeed, a successive application of epispastics to the abdo-

men, with tonic infusions, or absorbent mixtures, rendered agreeable by cinnamon or nutmeg water, and five or six drops of laudanum once in four hours, continued day and night, and a diet composed chiefly of light animal substances in the form of jellies, broths, or infusion; rice water, arrow root boiled to a thin jelly, and rendered cordial with wine and nutmeg, or brandy and nutmeg; milk with the addition of a small portion of lime water, or with chalk, gum arabic, and a little cinnamon, mace, or pimento boiled in it.

The following infusion is one of the best tonics and astringents for the diarrhœa, which sometimes succeeds the dysentery, viz.

℞. Rad. columb. in pulvere crasso ℥ss.

Pulv. gallæ. alep. sem. cardamom. ānā ʒij.

Spir. vin. com. (proof brandy) ℥j.

To remain some days in infusion—then to be strained, and from two tea-spoonfulls to a table spoonful, to be taken diluted with water, three or four times a day.

OF THE CHOLERA INFANTUM,

Or Vomiting and Purging of Infants and Young Children,

THE chief symptoms of this disease are a vomiting and purging concurring together, or immediately alternating with one another. And the evacuations both upwards and downwards are frequently mixed with bile.

From this last circumstance the disease has received its name.

This effused bile and other excreted fluids, irritate and excite the motions abovementioned.

When the disease begins with violence, the spasmodic contractions of the intestines are soon communicated to the abdominal muscles, and very frequently to those of the limbs. In this manner the disease frequently increases rapidly in violence, till the strength of the patient is greatly and often suddenly exhausted, while a coldness of the extremities, cold sweats, and faintings coming on, an end is put to the patient's life, sometimes in the course of a single day.

In other cases the disease is less violent, continues for a day or two, and then ceases by degrees; though such recoveries seldom happen without the assistance of art.

In many cases of young children, the diarrhœa continues after the vomiting has ceased, and after harassing the patient for many weeks, proves fatal.

The attack of this disease is not preceded by, or accompanied with febrile symptoms, and though during its course, both the pulse and respiration are frequent and irregular, yet these symptoms are generally so entirely removed by the remedies that relieve the spasmodic affections peculiar to the disease, as to leave no ground for supposing that it depends on the same condition of the system as idiopathic fever.

Dr. Sydenham observes that the cholera in England is chiefly prevalent in the month of August, and that the violence of the disease is in proportion to the heat of the air.

In Philadelphia it is most prevalent in the month of July, but cases frequently occur in June, August and September.

From these circumstances, and from the facts stated by tropical writers, it appears evident that a hot atmosphere is the predisposing cause of this disease.

The chief of the exciting causes appears to be a sudden change in the temperature of the atmosphere, for it is always most prevalent, when after extreme hot and dry weather, a fall of rain has suddenly cooled the atmosphere.

In some cases after the heat of the season has given the predisposition, the disease is induced by eating too freely of crude vegetables, and such substances as are of difficult digestion.

Emetics of the drastic kind are very apt to induce this disease when employed during the hot season.

Though the effusion of bile into the alimentary canal is frequently an exciting cause of the disease at first; it often continues after the bile is completely evacuated, owing to the debility and exquisite irritability, induced by the action of vomiting. This is similar to what happens after taking an over dose of tartar emetic; the vomiting often continuing after every particle of the emetic which first excited it, has been evacuated.

The pores of the skin being relaxed and enlarged by the summer's heat, and accommodated to the increased quantity of perspirable matter, which is determined thither and exhaled, any plethora occasioned by a diminution or suppression of that discharge, must overload the viscera of the abdomen whose ordinary secretions are most languid at that time.

The consequence of this determination is a distention of the vessels of the abdominal viscera, and of course irritation and pain, and this irritation and pain occasion an increase of their secretions.

The bile, and the pancreatic fluid, as well as the gastric fluid, appear to be more acrid in this disease than in a state of health: hence the application of these, or of any other acrid substance to the debilitated and irritable fibres of the stomach and intestines, occasions those enormous and irregular motions in their fibres, which have been described.

These convulsive motions sometimes exhibit an appearance of increased power, as well as of action; but this appearance is fallacious, otherwise sedative or debilitating and not stimulating remedies would afford relief.

TREATMENT.

In every case of cholera, the bilious and other acrid matters contained in the stomach and intestines should be immediately diluted, and carried off by large and frequent draughts of weak chamomile tea or warm water with two grains of pearl-ash dissolved in every ounce, and when the patient will submit to them, by injections of the same with the addition of olive oil.

As soon as this is accomplished, or sooner, if the spasms have begun to affect the limbs, recourse should be had to the internal use of opium, which should be administered in a liquid form by the mouth, if the stomach will retain it. To an infant from one to twelve months old from one to four drops with the same number of the essence of peppermint

should be given in sugar and water, and repeated every hour if retained on the stomach, till the evacuations and spasms cease, but if rejected, it should be repeated immediately after every evacuation, and also frequently by injection in larger doses. The laudanum should be proportioned to the patient's age and vigour: to a child from one month to a year, from one to four drops will be proper, repeated as above directed.

To render the laudanum more certainly effectual, every means should be employed to restore the determination to the surface. For this purpose, when practicable, the patient should be immersed in the warm bath, but where that is impracticable, double flannel cloths wrung out of hot water should be applied to his stomach, abdomen and limbs, as hot as he can conveniently bear them, and the application of the flannel cloths should be repeated as often as they become cool.

These failing, from four to twelve drops of laudanum should be thrown up the bowels, in a clyster of chicken broth, rice gruel, or chamomile, and fennel-seed tea, or any other simple liquid, moderately warm; and should be repeated every two hours, or after every evacuation, till the symptoms cease.

If the disease should continue, notwithstanding the judicious application of the remedies which have been directed, blistering plasters, or sinapisms should be applied to the stomach and inside of the legs, and the whole of the spine rubbed with mustard, mixed with the spirits of sal. vol. ammon. or a mixture of the oil of cloves, volatile spirits and sweet oil, and the patient should have his feet and legs kept warmer than usual, the doors and windows of his chamber being open, if the weather is dry, for the benefit of fresh air.

In some cases, double flannel cloths sprinkled with warm spiced brandy, or a mixture of oil of cloves, volatile spirits and brandy applied to the stomach and bowels, and a common heated flat or smoothing iron passed over the flannels have afforded speedy relief.

In some cases, ether exhibited in doses of three or four drops in any simple herb tea or mucilage, and frequently repeated has succeeded when opium has failed.

This disease is very liable to return the day following, unless prevented by suitable remedies. The remedies which I have found most efficacious for this purpose, have been the tincture of opium combined with a weak mixture of gum arabic and water, with the addition of calcined magnesia, or the carbonate of soda and the essence of peppermint, given in small doses at intervals, of four, six or eight hours, and continued for three or four days, after which the patient should take a weak infusion of Columbo root and cinnamon or nutmeg, with the addition of a small quantity of spirituous cinnamon water or old brandy four or five times a day, to restore tone and strength to the exhausted stomach and intestines.

During the state of convalescence, the lightest and most grateful food should be taken in a small quantity at a time, such as fowl broth, beef tea, boiled milk, rice gruel, sago, &c.

In general, adult patients soon recover perfectly from this disease, if managed agreeably to the preceding directions and the remedies are given in proportionable doses; but with infants and young children, the diarrhœa with occasional vomiting, is very apt to continue obstinate for a great length of time, and in general proves more fatal to them than any other disease to which they are liable.

It is to this chronic state of the disease that the term **Cholera Infantum** ought to be confined. I shall therefore proceed to give a description of the **Cholera** in its protracted state or chronic form under the appellation of the

CHRONIC CHOLERA, OR BILIOUS DIARRHŒA OF INFANTS AND YOUNG CHILDREN.

THIS disease is much more prevalent in cities and populous towns than in country situations, and its occurrence like the common cholera morbus is chiefly confined to the warm months of summer and autumn.

Its principal subjects are infants at the breast, and children under two years of age.

In Philadelphia, New-York, Baltimore and Charleston, more children are annually destroyed by this disease and the cholera in its acute form, than by all the other diseases to which they are subject in this variable and unsteady climate. Hence an acquaintance with the most successful methods of treating it, is of the highest importance to the community.

This disease is generally the consequence of an imperfect recovery from an attack of the cholera morbus, in its acute and common form. It however frequently comes on without being preceded by cholera after a sudden change of temperature in the atmosphere, affecting those chiefly, who have been exhausted by the preceding heat of the season, and the impure state of the atmosphere of cities or populous towns, and of low and marshy situations in the country.

It is distinguished from the diarrhœa, which occurs at other seasons, or that arises from indulging too freely in unripe fruit or other fermentable and irritating aliment, by the severe

nity of the griping, and the bilious, yellow, or green colour of the stools, and by being accompanied with sickness of stomach and vomiting or a propensity to vomit immediately before every stool; and it is distinguished from the acute cholera morbus, by the greater length of time between the evacuations.

It may also be distinguished from the diarrhœa which frequently accompanies teething, by the difference in the strength of the pulse, temperature of the skin, power of muscular exertion or voluntary motion, and in the aspect of the countenance. In the latter case, these differ but little from their natural state, for several days after the commencement of the disease, and the evacuations are watery or slimy, and but seldom discoloured by the addition of bile, whereas in the bilious diarrhœa, which occurs in the hot season, unconnected with teething, the sickness of stomach is frequent, and the debility in most cases very considerable from the commencement of the disease. The pulse is quick and small, or low and soft, the skin cold and dry especially on the limbs, the features appear to be shrunk, the countenance pale or livid, and the eyes dull and inanimate. The thirst increases as the disease proceeds, the flesh wastes daily, all kinds of aliment are loathed and refused, excepting breast milk. No drink but cold water is grateful, and that is thrown up soon after it is swallowed.

All the enumerated symptoms generally continue to increase daily, till the patient breathes his last, unless relieved by judicious nursing and appropriate remedies. In dangerous cases the evacuations become more copious and frequent, in some rapidly, in others more slowly; the stomach loses its digestive power, every thing taken into it, soon after, passes through the intestines undigested, or but little altered in its texture. The thirst becomes insatiable; the mouth and tongue covered

with apthæ, or with small white vesications or ulcerations; the face and feet swell and become œdematous, the abdomen becomes distended with air, the skin livid, and often spotted or speckled with dark coloured blood effused under the cuticle; the patient lies comatose and insensible, with his eyelids half open and his eyes turned upwards. When reduced to this deplorable condition his days may be considered as numbered and is death approaching.

The duration as well as violence of this disease is very various: some recovering in the course of a week or ten days, while others linger for months, and though so emaciated as to resemble skeletons, at length recover; while the majority die in the course of the third or fourth week; many after lingering six or seven, and some after a much longer period.

From the preceding view of the disease, it appears that the griping or spasmodic affection of the alimentary canal is occasioned by the introduction of irritating matters into it, either in the form of aliment or drinks, or by the colluvies poured into the intestines from the pancreatic and biliary ducts, and from their own exhaling and secretory vessels. The excretories from which the greatest quantity of liquid matter is effused into the intestinal canal, are those of the intestines themselves, and are either the exhalents proceeding directly from the extremities of the arteries, or the mucus follicles; both of which occur in prodigious number over the internal surface of the whole intestinal canal; it is therefore probable that it is chiefly the effusion from these sources, in most instances, that the matter of the liquid stools is derived.

Hence it appears that the matter effused into the intestines, by which the griping and alvine evacuations are occasioned,

is owing to too forcible a determination of the circulating fluids to the intestines and other abdominal viscera, previously debilitated, and rendered morbidly irritable by the operation of the remote causes.

'TREATMENT'.

As this disease depends principally upon a debilitated and disordered state of the abdominal viscera, and especially upon an atonic and morbidly irritable state of the exhalent and secretory vessels of the stomach and intestines, produced by the debilitating operation of the remote causes and particularly by the relaxing and exhausting effects of the high temperature which predominates during the summer and autumnal months, in conjunction with the impurity of the air; and the subsequent torpor produced upon the vessels of the external surface of the body, by a sudden change of temperature, and in many cases, by the exhaustion produced by previous vomiting, and as the griping or painful spasmodic or convulsive motion of the intestines, and the frequent and copious liquid evacuations by stool, accompanied with sickness and vomiting, or inclination to vomit, are occasioned by the heterogeneous and irritating colluvies, that is poured into them from the pancreas and liver, and from the exhalents and glands with which the stomach and intestines are themselves so plentifully supplied; by the stimulating impression of which, the spasmodic motions of the intestines is produced, we are not to expect to remove the disease by merely scowering out the intestines by means of purgatives; for though purgatives may remove the colluvies already collected in them, they must in some degree, augment and enlarge the source from whence the irritating colluvies is derived.

But the cause which induces and supports this effusion of irritating matter into the intestines, being an undue determi-

nation of the circulating fluids to the internal viscera and alimentary canal, and a morbid state of their exhaling and secreting vessels, in consequence of the preternatural resistance which the circulating fluids meet with from the torpor or constriction of the vessels distributed over the external surface of the body. The indications of cure, are, after clearing the ground by a suitable emetic and cathartic, to make way for the operation of excitants and tonics, to withdraw the force of the circulation from the internal, and to direct it to the external surface of the body, and there to support it, while appropriate means are employed to restore and establish the tone, and healthy action of the stomach and intestines, and of the exhaling and secretory vessels, with which they are supplied.

An emetic has the effect not only of evacuating the contents of the stomach, and thereby clearing the ground for the operation of other remedies, but of determining the fluids to the external surface of the body, and thereby assisting in accomplishing one of the principal indications in the cure of this disease; it is therefore a remedy that ought generally to be employed at an early stage of the disease, if the patient has sufficient strength to render its operation safe; and may be occasionally repeated while the strength will admit, and the determination to the bowels, requires such a remedy. The emetic which I prefer on these occasions, is ipecacuanha, which I generally direct to be administered agreeably to the following prescription.

℞. Pulv. ipecacuanhæ ʒj.

Aquæ communis ʒj.

Sacch. alb. ʒj. misce.

Of this mixture, two tea-spoonfulls may be given to a young infant, and half as much repeated every quarter of an hour, till it begins to operate; after which a little warm water, coloured with milk, barley water, or weak balm tea, may be

given frequently, till it has done operating; after which the little patient should be immersed in a vessel of warm water, then wiped dry, take an anodyne suited to its age and strength, and be laid in bed with its feet and legs covered with flannel or soft muslin. The object being to produce perspiration, all the drinks should be given warm, till that makes its appearance; after which, in order to support the determination to the surface, and to divert it from the intestines, the emplastrum calidum should be applied to the abdomen, wrists and ancles, and should be continued on, till it raises vesications on the skin; or if these should be thought more severe than the urgency of the case requires, the common gum or Burgundy pitch plaster may be applied to the abdomen, and a little powdered ginger, and oil of cloves mixed with unguent. basilicon to the wrists and ancles. When the symptoms indicate the existence of considerable debility, cordials and stimulants are the only remedies of much avail; though when the stools are green, curdled and frothy, the cretaceous julep, with the addition of a small quantity of cinnamon water, or anniseed water, and a very small quantity of tinct. opii. in each dose is a useful auxiliary, as it serves to correct the irritating acid which usually abounds, and to ease the griping or spasmodic affection of the intestines at the same time.—Wine seldom agrees; but spiced brandy copiously diluted with water, or hot brandy toddy, rendered agreeable by the addition of powdered nutmeg generally agrees, and if given of proper strength is frequently beneficial; though I have found strong anniseed water or cinnamon water more grateful and equally effectual, mixed with a sufficient quantity of water and sugar. It has been found particularly serviceable, to give a little warm watery infusion of cinnamon, cardamom, anniseeds, or fennel seeds, as well as the cretaceous anodyne mixture, after every evacuation. When the restlessness and distress of the child appears to proceed from wind, distending its intestines, a small clyster of moderate warmth, made of lintseed tea or bar-

ley water, with the addition of two or three drops of the oil of anniseed, or essence of peppermint, and half a table spoonfull of sweet oil, will generally occasion an evacuation and give immediate ease; or a strong infusion of the flowers of the lupulus humulus or common hops, may be substituted, and from five to twenty drops of a spirituous tincture of the same may be given by the mouth every fifteen or twenty minutes, mixed with a sufficient quantity of warm water, sweetened with sugar, in lieu of the more narcotic class of anodynes.—The hop tincture may be prepared by infusing half an ounce of the flowers in eight ounces of brandy for a week or ten days; after which the liquor should be strained off and kept in a bottle with a glass stopper. In mild cases of cholic, the infusion of hops is to be preferred to other anodynes, because it usually operates as a purgative, at the same time that it mitigates pain connected with spasm—but in more severe cases of the cholic of young infants, there are no remedies equal to warm mucilaginous and oily injections, and the cautious use of an alkaliescent aromatic mixture, similar to that called Dalby's carminative.

When an injection cannot be conveniently administered, a weak infusion of coarsely powdered rhubarb and calcined magnesia in boiling water, with a due proportion of cardamom or coriander seeds, and the flowers of hops should be substituted and given by the mouth every hour, till it has the desired effect of passing through the intestines, and carrying off the confined flatus and other extraneous matters; after which immediate recourse should again be had to mildly stimulating and invigorating agents.

Under the circumstances first mentioned, mild evacnants are not only safe, but have been found by experience absolutely necessary to carry off the extraneous matters, which

if permitted to remain, would prove a source of irritation, as well as mechanical obstruction to the operation and influence of exciting and invigorating remedies. These remedies, if duly persisted in, very frequently subdue, or at least suspend the disease, and make way for the employment of tonics, which should then be employed in conjunction with the usual cordial, and aromatic stimulants. Of the tonics, I give the preference to the bark in decoction combined with cinnamon, cardamom seeds, or a very small quantity of any other agreeable spice.

The tincture of gum kino, may also be given in some agreeable aromatic infusion or mixture; or in the cretaceous mixture, which is recommended by Mr. Ring, an ingenious practitioner in London, to be prepared in the following manner, viz.

℞. Cretæ. ppt. ℥iv.
 Pulv. gum arab. ℥ij.
 Aquæ distillat. ℥ij.
 Aq. cinnam. simp. ℥ss.
 Sp. cinnam. ℥ij.
 Sach. alb. par. ℥ij. misce.*

The child to take from one to four tea spoonfulls according to its age, once in four hours, and also after every stool.

To each dose of this, may occasionally be added, to relieve griping, from one-fourth of a drop to two drops of laudanum, and to strengthen the stomach, from five to fifteen of the tincture of gum kino, or twice as much of a spirituous tincture of the common ink galls.

When the debility is very great, and the griping or cholic pains require the use of laudanum, it should always be given in very small doses, and should seldom be repeated in such cases,

* London Medical and Physical Journal, vol. xii. p. 106.

after relief is obtained by it, in less than four hours. From neglect of this precaution, numbers have been more injured than benefitted by it.

When a superabundant acid exists, which is known by the green colour and frothy appearance of the stools, and the acid eructations or evacuations by vomiting, calcined magnesia is preferable to chalk, on account of its being deprived of its carbonic acid, and to the common vegetable alkali, on account of its greater mildness.

In such circumstances, therefore, the following mixture should be substituted in the place of the cretaceous mixture :

℞. Magnesia calcinat. ℥iv.

Pulv. gum arabic ℥ij.

Sacch. alb. pur. ℥ij.

Aq. cinnam. simp. vel.

Aq. menth. pip. ℥ss.

Aq. communis ℥ijss. misce. et adde, aquæ ammoniæ puræ (commonly called volatile spirits of sal ammoniac), from forty-eight to one hundred and forty-four drops, according to the age of the patient. To the above may occasionally be added, the same number of drops of the essence of peppermint as of the ammonia, and from one fourth to two drops of laudanum to every dose.

From one to two tea spoonfulls of the preceding composition, should be given regularly every half hour till the griping ceases or is suspended, and afterwards every third or fourth hour, mixed with warm water, sweetened sufficiently with best white sugar.

The same medicine should also be given in diminished doses after every evacuation, observing to administer anodyne mucilaginous injections occasionally, to relieve griping and

the spasm of the bowels, and to have recourse in more dangerous cases to the warm bath, and the external application of laudanum mixed with warm brandy, or camphorated spirits. Though the corrosive acid in the stomach and bowels is not the primary cause of the griping and purging, it is the exciting or efficient cause, and therefore requires such remedies as have the effect of neutralizing it.

Magnesia has long been in great repute as a remedy in the griping and green purging of infants and young children, but its efficacy is very much improved by the addition of pure ammonia, as the effect will be nearly the same without the magnesia; but the magnesia will not have so certain an effect without the ammonia.

Experience also proves, that no other alkaline substance is of sufficient efficacy in neutralizing the existing acid in the stomach as the alkalies in a volatile state. From this circumstance, it is probable the spasmodic effects, produced by the acid in the stomach and intestines, arises from the acid being in a gaseous state, more than from their liquid contents. This acid gas is probably neutralized by the alkaline gas, into which the water of pure ammonia is supposed, by Mr. Pearson, to be converted by the heat of the stomach.

That the carbonates of ammonia do not succeed so well may be owing to the greater attraction of the carbonic acid for the alkali, than that of the acid gas in the stomach and intestines. Whether this explanation is just or not, the superior efficacy of the volatile alkali has been long established; and was taught more than twenty years ago by Dr. Kuhn, in his lectures delivered in the University of Pennsylvania.

When the child is unable to raise its head from the pillow, or to be held up, and its features appear contracted and

ghastly, and its eyes seem inanimate, or when it keeps them half open and turned upwards, and a livid circle appears around them, the countenance being of a pale livid colour, accompanied with great prostration of strength, danger in the highest degree is indicated.

In these cases every evacuation from the bowels, is preceded by sickness at stomach, griping and pain, which are denoted by the moaning, restlessness, and tossing about of the arms, and rolling of the head from side to side. Under these circumstances, our principal resource is in mucilaginous clysters, composed of thin arrow root, or rice boiled to a jelly, or diluted calves' feet jelly, and infusions of the common aromatic spices, &c. to which may be added, from one to four drops of laudanum, or eight times as much tinct. opii. camphorat. formerly called paregoric elixir, observing to apply blisters or other stimulants externally to the abdomen and limbs at the same time, and to keep his body and limbs surrounded with soft flannel, without regard to the temperature of the season; supporting the strength in the mean time, with such refreshing nourishment as the child can take, either by the mouth or by injection. If these means should have the desired effect of suspending or moderating the disease, the patient should, if possible, be immediately removed from the hot and insalubrious air of the city, to the cooler and purer air of the country, and remain there until perfectly recovered. For we might with equal reason, expect to cure an inflammation of the eyes occasioned by a smoky room, without a change of situation, as to make a complete cure of the bilious purging of infants and young children, so long as the heat and impurity of the air, which gave origin to the disease continue to operate.

When the child appears to be rendered restless by painful spasms of its intestines, or by distension from confined air,

temporary relief may generally be obtained by a small injection, made of flaxseed and fennelseed infused in boiling water, to which a small quantity of fresh olive oil, and two or three drops of the oil of anniseed should be added, and the same repeated as often as these symptoms return.

Removal to the high grounds of the country, sufficiently remote from marshes, ponds, or mill-dams, to prevent any injurious effect from such sources before the extreme heat commences, is the best preservative against the cholera and bilious diarrhœa of infants, and young children; and removal to the country, after the disease has occurred, as soon as its symptoms are suspended, is the most certain method of restoring the patient to health.

The diet of the patients should consist principally of breast milk, care being taken that the nurse subsists on mild nutriment, consisting principally of animal substances, and avoids all kinds of spirituous liquors, excepting a small quantity of sound porter, or weak sangree, made of Madeira or port wine, with the addition of grated nutmeg, and avoids every kind of purgative by which the milk can be affected. Breast milk, and in cases where the child is weaned, a thin decoction of the West India arrow root, in milk and water, made palatable with grated nutmeg and double refined loaf sugar, or of rice prepared in the same manner, will be proper; and in cases of lientery, and loss of tone of the digestive organs, very weak punch, made with rennet whey, instead of milk, rendered palatable by the addition of double refined sugar and nutmeg; and when acidity and flatulency abound, beef tea or chicken water, with whole pepper, mace, or pimento boiled in it, and seasoned lightly with salt, have been found most beneficial.

When cow's milk is used, it should always be boiled with twice as much water, and may be rendered more beneficial by the addition of one eighth part, or tenth part of lime water, and a little loaf sugar, as with that addition it neutralizes the existing acid, and gives tone to the debilitated fibres of the stomach.

For the analysis of women's and cow's milk, see Thomas's and Herdman's Abstract of the experiments of Dr. Clark of Dublin; from which it appears, that the milk of a healthy woman agrees better with a weak stomach, as it scarcely curdles when mixed with a strong acid, as well as with the stomach of an infant, than any other substance. Whereas, the milk of a cow, before the curd is separated, is one of the worst and most improper kinds of food that can be taken into a debilitated stomach abounding with acidity.

The whey, however, of cow's milk, which is made by mixing a small quantity of rennet, (a portion of the dried stomach of a calf) with it, previously warmed, bears a near resemblance to the milk of a healthy woman, and may occasionally be substituted for it.

Cases of diarrhœa often occur in summer that are not bilious, particularly in the month of June and the early part of July. In these cases the alvine evacuations, are usually more or less mixed with mucus, and are sometimes tinged with blood, the purging though more frequent is attended with less griping, and the evacuations are less in quantity; the countenance is more animated, the eyes more bright, and the muscular debility and sickness at stomach less evident and distressing.

Children, whose gums are inflamed by the process of teething, are most frequently the subjects of this kind of diarrhœa:

and my observations lead me to conclude, that the effects of teething, instead of being the cause of the bilious diarrhœa is generally a preventative, except the inflammation occasioned by the teeth before they pass through the gums, be so great as to induce indirect debility.

To relieve the diarrhœa, which is occasioned by teething, an incision should be made through the swelled and inflamed gums, so deep as to reach the advancing teeth, which will prevent any further irritation from that cause. The irritation and pain occasioned by teething, frequently renders the stomach liable to be disordered by every thing the infant swallows; under these circumstances, gentle purgatives, such as calcined magnesia or oleum ricini, in the day time occasionally repeated, and a sufficient anodyne at night, either by the mouth or by injection, to insure sleep, are the remedies which I have experienced to be most efficacious in affording relief.

Calomel has been employed by some physicians, and repeated daily for several days, as a remedy in the green and watry purging of infants, and among others by Dr. Clark of Dublin, and Dr. Cheyne of Leith, from an idea that the disease depends upon a deranged state of the functions of the liver, and they have reported in its favour; but I could never reconcile it to my conscience to make trial of a remedy in a disease, in which an increase of debility is the circumstance most to be guarded against, the primary and direct effect of which remedy, is to increase the evacuations already too copious, and to reduce the strength of the patient already too much exhausted.

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